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ABSTRACT

A wide variety of materials are listed and described in this resource guide. Listings include textbooks, enrichment materials, manipulative materials, and study units appropriate for students in grades K-12. Materials reviewed cover the full range of mathematical subject matter, and vary widely in their approach. Listings are arranged according to the company from which the resource is available; materials for which teacher's guides are available are starred and those carrying the recommendation of Mu Alpha Theta are also indicated. Addresses are provided for the 100 companies whose materials are listed. Detailed reviews of the Stretchers and Shrinkers materials and three texts of Dolciani, et al., are also included. (SD)

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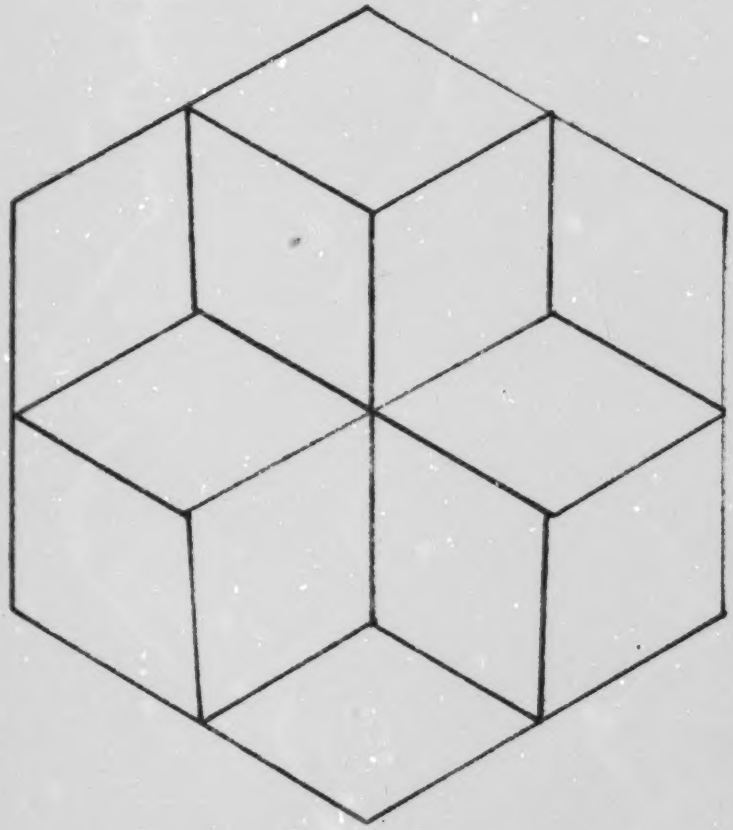
THE

UNIVERSITY OF PENNSYLVANIA

RESOURCE GUIDE

TO

SCHOOL MATHEMATICS



Graduate School of Education
University of Pennsylvania
Philadelphia, Pennsylvania 19174

SE018 747

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THE

UNIVERSITY OF PENNSYLVANIA

RESOURCE GUIDE

TO

SCHOOL MATHEMATICS

1974 Editor Janet Hudson

1973 Editor Gail Garber

Dr. Gerald A. Goldin

Program Coordinator
Mathematics Education

Graduate School of Education

University of Pennsylvania

Philadelphia, Pennsylvania

Introduction

This is the second annual Resource Guide to School Mathematics published by the Mathematics Education Program at the University of Pennsylvania Graduate School of Education. It serves two basic purposes: to provide a convenient, up-to-date reference for teachers, prospective teachers and other interested educators, and to present critical reviews of some texts in addition to shorter reviews and descriptions of others.

We have tried to expand and revise the bibliography with respect to both the number of books included and the scope of the reviews. The books which are reviewed were sent to us by the publisher either this year or in previous years, or else were readily available to the editor. Some publishers did not reply to our initial letter, and thus we were not able to describe or review their publications.

The notation "(MAT)" following the description of a text indicates that the book is recommended by Mu Alpha Theta, the national honor society for high school math students. The symbol "*" following the grade level of the book means that a teacher's edition of the text is available. The listings by publisher are divided into categories. "Elementary" denotes roughly grades K-6, and "secondary" is used to describe the section for grades 7-12. We have sometimes included two other categories; "intermediate" to describe those books or series suitable for grades 4-9, and "general" to refer to books which include material suitable for all grades.

We welcome suggestions or criticisms from readers, as well as additions or corrections to the bibliography. We shall consider short reviews submitted by the readers for publication in the next edition of the bibliography.

-- Janet Hudson
March 1974

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University of Pennsylvania Graduate Programs in Mathematics Education

Faculty: Gerald A. Goldin, Ph.D.; Assistant Professor of Education
Ira J. Kalet, Ph.D., Lecturer in Education
Claude Mayberry, Ed.D.; Adjunct Assistant Professor of Education

The Graduate School of Education (GSE) offers programs leading to the M.S., Ed.D., and Ph.D. degrees in Mathematics Education. Applications are invited for January 1975 and September 1975. A limited number of scholarships and fellowships are available for full-time study.

Our Math. Ed. group is of modest size, and students collaborate closely with members of the faculty. Two masters specializations are available. The intern specialization provides secondary certification in teaching mathematics to those with strong undergraduate backgrounds in mathematics or related fields. It features a semester of full-time teaching with University supervision, and leads to the M.S. in Math. Ed. after one year of full-time study. Alternatively, teachers who are already certified may obtain their M.S. after one year, taking approximately half of their courses in pure or applied mathematics, and half in related areas of education.

The doctoral sequences emphasize research and development in mathematics education, curriculum, and the psychology of problem-solving, with the opportunity for course work in several departments of the University. Special faculty research interests include artificial intelligence models for problem-solving, problems of descriptive and diagnostic testing in mathematics, and computer-assisted instruction. We have a well-equipped mathematics laboratory in the GSE. As we are located in West Philadelphia, there is considerable attention devoted to problems of urban education. Graduate students are free to pursue their own avenues of research with faculty guidance.

If you are a student or teacher with good academic preparation and a commitment to mathematics education, we hope that you will consider applying to the University of Pennsylvania.

Dr. Gerald A. Goldin
Program Coordinator,
Mathematics Education
September 1974

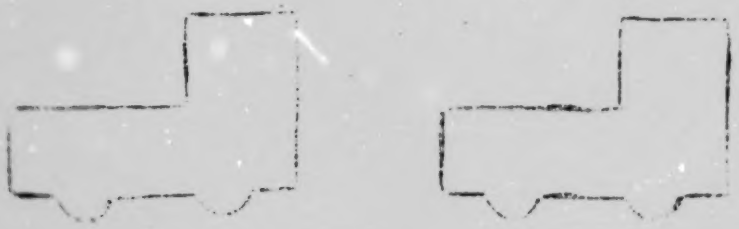
For catalogs and application materials, please write to Mr. Peter Bent, Admissions Office, Graduate School of Education, University of Pennsylvania, Philadelphia, Pennsylvania 19174.

A Review of the University of Illinois Middle School Materials

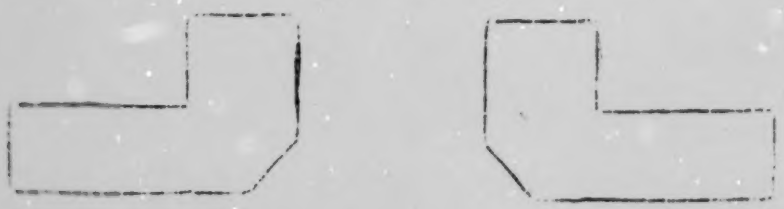
The two series consisting of Stretchers and Shrinkers (Volumes I - IV) and Motion Geometry (Volumes I - IV) published by Harper and Row were developed by the University of Illinois Committee on School Mathematics (UICSM). They are activity-centered, multi-sensory series designed for junior high school students who have had previous difficulty in mathematics. With proper supplementation, however, they may be used at a variety of levels.

In the four student workbooks comprising the seventh grade text Stretchers and Shrinkers, "function machines" are used to explore operations and concepts involving fractions, decimals and percents. A stretching machine performs whole number multiplication, while a shrinking machine performs whole number division. Fraction machines are formed by connecting stretching and shrinking machines. Such connections help to explain the concept of composition of functions.

The series Motion Geometry also consists of four student workbooks. Distance-preserving (isometric) mappings are the means by which geometry is studied. Tracing is used as a fundamental skill--for example, the two figures below are "congruent" because a tracing of the one on the left matches the drawing on the right.



The operation used in moving the left-hand figure to match the right-hand one is called a "slide." By turning the tracing over, the following two figures are seen to be congruent:



Here the operation involved is a "flip." The other operation used is a "turn"; the following figures illustrate a turn through ninety degrees:

The operations of slides, flips and turns are used to explore intuitively the concepts of congruence, similarity and area. Very little computation practice is included in this series; supplementary work in arithmetic is necessary.

Concepts are developed intuitively by UICSM using a discovery technique in which students begin with concrete, manipulative examples and move towards abstract concepts. One disadvantage found in both series is that very little provision is made for problem-solving review in order to apply and reinforce learned concepts.

The Mathematics Education Program at the University of Pennsylvania Graduate School of Education is participating in an interdisciplinary master's level teacher education program designed for the middle school. The Middle School Resources Institute has been funded for 1974-1975 by the National Science Foundation. The UICSM materials have been selected as a basis for studying the teaching of mathematics in middle school grades. Extensive use is being made of mathematics laboratory activities developed by teachers and graduate students.

- Janet Hudson

BIBLIOGRAPHY

Braunfeld, Peter G. Stretchers and Shrinkers,
Book 1 - The Theory of Stretching Machines,
Book 2 - Advanced Topics in Stretching and Shrinking,
Book 3 - The Theory of Fractions,
Book 4 - Decimals. Harper and Row, 1969.

Hoffman, Joseph R. Activities Handbook for Stretchers and Shrinkers, Books 1 - 4. Harper and Row, 1970.

Phillips, Jo McKeeby and Zwoyer, Russell E. Motion Geometry,
Book 1 - Slides, Flips and Turns,
Book 2 - Congruence,
Book 3 - Symmetry,
Book 4 - Area, Similarity and Constructions.
Harper and Row, 1969.

Tremblay, Clifford W. Activities Handbook for Motion Geometry, Books 1 - 4. Harper and Row, 1969

An Evaluation of Three Modern School Mathematics Texts

This paper is a review of three Modern School Mathematics texts on the high school level, namely, Algebra I, Geometry and Algebra II, by Dolciani et al. Since my experience is limited to high school classes and in particular, to a Philadelphia "inner city" high school, the texts are viewed in the light of their capabilities in those circumstances.

In all likelihood, the first section that a prospective user of these texts will read is the teacher's manual in the front of the book. The manual is very revealing for two reasons. First, it seems to be directed at what the authors believe high school teachers to be like, resembling more a refresher course in the subject rather than a collection of helpful hints and devices which would be more to the point of teaching. For instance, in the 1970 edition of the Modern School Mathematics (MSM) Algebra I text, on the top of page 25 of the teacher's manual section, one reads:

> "This section defines the difference of two numbers in terms of addition. While the operation of subtraction is not formally defined here, this operation has the same relationship to difference as addition does to sum. Thus, the operation of subtraction is the pairing of two real numbers in a specified order with a third real number."

This is well and good, but it is more an explanation to a student of Algebra I than an aid to a teacher of the subject.

The second revealing aspect of the teacher's manuals is their lack of information regarding the philosophy or philosophies of the authors, although one would expect the authors of a new series of texts to explain this at some length. As it turns out, the rather cookbook-like approach illustrated above is all that the reader of the manual will find.

The texts themselves have more merit than the teacher's manuals, in that several outstanding features can be found. At the top of the list of good features are the exercises. H. O. Pollak remarks, in connection with the Algebra I text, that the exercises were devised so as to give "practice, thought and insight" into the concept in question [See ref. 5], and, judging from the finished product, it may fairly be said that this goal has been met. Similar observations can be made about the Geometry

and Algebra II texts. Thus following the section on consecutive integer problems, no less than 38 nicely varied problems are presented. It presents no difficulty at all for the teacher to select out of such a treasure trove those problems which best review the day's lesson.

Another uniformly good feature of the MSM texts is the treatment of individual topics qua individual topics. For example, on pages 56 to 62 of the 1969 edition of the Geometry text, a good section on lines, line segments and planes related to circles and spheres (radius, chord, tangent, etc.) is found. The exercises greatly strengthen the grasp of the ideas presented. Likewise, on pages 87 to 89, under the heading "extra for experts," the text discusses fallacies arising out of reasoning from the converse or inverse, using both symbolic logic and Venn diagrams. The presentation given is sufficient for the students themselves to generate and label additional examples of reasoning from the converse and inverse.

In the area of motivation, the texts are very mixed. On the positive side, an extremely effective method of presenting problem solving, a topic often regarded as the most fearful in Algebra I is described. The text brings up the idea that students should first start with algebraic expressions (later, equations) and fit words to them. An example of this idea which arose in one of my classes is the following: for the expression "3e + 4," the student wrote "4 more than three times the number of enfants terribles in Alg. I." Occasionally, answers given by students might have to be censored, but what a delightful contrast this presents to the usual lack of understanding.

On the unfavorable side there is the introduction to formal proofs as given in the Geometry text. The student first encounters formal proofs on page 101 of chapter 3. What he finds there is not the first gentle suggestions of what formal proofs mean or how the most elementary proofs are constructed. Rather, he finds several proofs of seemingly all-too-obvious statements which nevertheless require four or more steps, and, indeed, are given only in outline form as opposed to "two-column" form. One might ask what sort of impression this will make on students. The most likely impressions are: (1) "why would you want proof of something so obvious?" and (2) "why are the proofs so complex and how did anyone arrive at those steps?" In addition, this instills the feeling in a student that only geniuses can create such proofs--mere students could never be expected to do it. The first theorem is proved

by contradiction, and the second two require proofs of existence and uniqueness. Such an introduction to proofs is impossible for the student to understand before he or she has realized (a) what direct and indirect proofs are and (b) that the phrase "exactly one" splits up a proof into two parts. Unfortunately the book is entirely silent about these questions prior to the presentation of the proofs just mentioned.

The student is given no discernible reason why anyone should want to give a formal proof of anything. Consequently, if a teacher intends students to do proofs, the teacher will be thrown back entirely on his or her own resources.

Finally let me refer to what I regard as the most important defect in the MSM Geometry text. In the authors' zeal to "clean up" Euclid by introducing metric postulates, the final system winds up with ten postulates as opposed to Euclid's five. Granted, this is in the spirit of the writing team's philosophy of not introducing too "frail" a set of assumptions that require long and difficult proofs before a substantial structure of theorems is established. On the other hand, the loss of elegance that such a set of assumptions entails is great enough to make a serious student wonder what exactly the purpose of the whole enterprise is.

It has for example long been known that Euclid's parallel postulate ("through a point outside the line, one and only one line can be drawn parallel to a given line") is <u>the</u> assumption that restricts the system to ordinary plane geometry, and that violation of that assumption leads into non-Euclidean geometries. To say the least, this Geometry Text rather heavily disguises that fact. Rather, "corresponding angles" is taken as a postulate (page 152) and then the parallel postulate is proven as a theorem (page 161). This leaves a teacher in a difficult position if he wishes to broach the topic of non-Euclidean geometry.

In summary, there are few shortcomings in the Algebra texts that are not easily remediable. A decent background in mathematics allows the teacher to make necessary corrections. Unfortunately, the situation is more serious for the user of the Geometry text. Unless the teacher is willing to surrender elegance in synthetic or Euclidean geometry, the book presents some large stumbling blocks. It is to be hoped that these problems will be thrashed out before another edition of <u>Geometry</u> is published.

- James Mason
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Philadelphia, Pennsylvania

BIBLIOGRAPHY

1. Begle, E. G. (Ed.). National Society for the Study of Education, 1970 Yearbook, Vol. 69, Part 1, "Mathematics Education." University of Chicago Press, 1970.

2. Dolciani, Mary P., et al. Modern School Mathematics Algebra I. Houghton Mifflin Company, 1970.

3. Dolciani, Mary P., et al. Modern School Mathematics Geometry. Houghton Mifflin Company, 1969.

4. Dolciani, Mary P., et al. Modern School Mathematics Algebra II. Houghton Mifflin Company, 1968.

5. SMSG. Philosophies and Procedures of SMSG Writing Teams. The Board of Trustees of Leland Stanford Junior University, 1965.

ACTIVITY RESOURCES, INC.
P.O.Box 4875
Hayward, California 94545

Elementary and Intermediate

Think and Color, Lucas, Neufeld. K - 3.

This coloring book includes activities in transformations, rotations, classifications, patterns, part - whole relationships, work, color combinations and symmetry. It is based on the Piagetian idea of pre-operations.

Colored Cubes, Sternberg. K - 5.

Activities presented in picture form lead to the discovery of patterns needed to build sequences.

Environmental Geometry, Kirk. K - 8.

City and nature scenes illustrate the geometrical topics of points, ordered pairs, lines, angles, polygons, circles, regions, planes, solids, congruence, similarity, symmetry, construction, and design.

Picture Graphs, Neufeld, Lucas. K - 8.

This picture book of graphing includes pre-graphing, inventory tasks, arrow graphs, two-way graphs, vertical bar graphs and graphs of probability.

The Fabric of Mathematics, Laycock, Watson. K - 9.

This resource book to individualize an activity-centered math program includes a scope and sequence of 91 concepts, objectives, activities, references and assessments. Student record sheets are available.

Enhance Chance, Becker, Laycock, Waring. K - 9.

45 games use dice as number generators.

Picture Patterns, Stokes. 1 - 8.

Patterns demonstrating geometric relationships are given. Concepts discussed include symmetry, congruence and similarity.

Metric Maneuvers, Richardson, Miller. 2 - 7.

Resources involve "big muscle" activity and the metric system.

People Pace Puzzles, McLaughlin. 2 - 8.

Activities for developing reasoning are presented.

It's a Tangram World, Jenkins, McLean. 3 - 8.

Activities with tangrams are included in this book.

Area as a Measure of Covering, Laycock. 3 - 9.

Transparencies and grids develop the intuitive concept of area for rectangles, parallelograms, triangles and circular regions.

Activity Resources, Inc.

Metric Multibase Mathematics, Holmberg, Laycock, Sternberg. 3 - 9.

Activities with metric blocks reveal the relationships, patterns and operations of mathematics.

Activities with Squares for Well Rounded Math, Schreiner. 4 - 7.

This book includes ideas for the use of "grid paper" in numbers and operations, numeration, fractions, geometry, measurement, probability, sets, logic, patterns, math art and games.

The Metric System of Measurement, Holmberg. 4 - 9.

Some of the topics included are linear measurement, area, volume, liquid capacity, weight, and temperature.

Algebra in the Concrete, Laycock, Schadler, Children. 4 - 9.

This picture book text uses multi-base blocks with photos and day-by-day descriptions to develop algebra.

General

Let's Pattern Block It, McLean, Jenkins, McLaughlin.

These activities are to be used with pattern blocks in addition, fractions, geometry, area and perimeter.

The Rauen Math Dictionary. 4 - 10.

This dictionary contains definitions and operations with whole numbers, fractions and decimals.

Sets and Their Uses, Laycock, Cassel. 3 - 12.

Color overlays on 5 transparencies develop the ideas of disjoint sets, union, intersection and complements of sets.

Metric blocks, metric kit, fraction tiles, tangrams, games, aids, fraction dominoes, activities, primary slide rule, and transparencies are also available.

ADDISON - WESLEY PUBLISHING COMPANY
South Street
Reading, Massachusetts 01867

Elementary

Madison Project Materials, 1966, Davis. K - 6. *

Informal, creative learning experiences contained in the student texts extend the basic curriculum by stressing discovery learning.

Addison - Wesley Publishing Company

Investigating School Mathematics, 1973, Eicholz, O'Daffer, Fleenor. K - 6. *

A five-stage lesson is utilized: preparation, investigation, discussion, utilization, and extension. This program is also suited for individualization, according to the publisher.

Elementary School Mathematics, 1971, Eicholz, O'Daffer, Martin. K - 6. *

This series integrates modern power school techniques with speed skill operations. Concepts are introduced in a spiral organization with an emphasis on computational skills. The series is also available in Spanish. (1974)

Mathematics for Schools: An Integrated Series, 1972, Fletcher, Howell. K - 5. *

This series, developed in England, reflects the influence of the Nuffield Project. Children begin with a real situation and progress through doing and discussion activities into practice activities. Then they apply their experience to new situations and make generalizations.

Experiences with Geometry, 1966, Eicholz, O'Daffer. K - 6. *

This workbook designed to supplement any elementary program provides an intuitive basis for work with key ideas in geometry.

Elementary Enrichment Mathematics Series, 1969, Diliberto, Housh. K - 6. *

This is a three-book program intended primarily for the early elementary grades. It involves the child with work on number lines and grids. Students learn to discover relationships about objects by using information that can be enumerated.

A. S. M. D., 1963, Hancock, Holden, Lucas, O'Brien, Schneider. 2 - 6. *

Four short programmed texts provide remedial work in the whole-number operations.

Developmental Math Cards, 1970, Bates, Irwin, Hamilton. 1 - 6. *

This activity kit supplements any basal mathematics program and includes applications of mathematics through guided experiences.

Arithmetic Skill Cards for Development, Practice, and Application, 1972, Fleenor, Eicholz, O'Daffer, Ellis. K - 6.

These cards for independent review of basic computational skills include examples and flowcharts.

Mathematics Activities Kit, 1972, Knaupp, Bitter. K - 6.

This kit contains a manual and materials such as tangrams, geoboards, rods, cubes, attribute blocks, a balance and a set of MAK cards to use in game situations.

Geoboard Kit - Four 5 x 5 boards.

Addison - Wesley Publishing Company

Secondary

School Mathematics I and II, 1971, Eicholz, O'Daffer, Brumfiel, Shanks, Fleenor. 7 - 8. *

These two books form a sequel to Elementary School Mathematics. The first volume reviews elementary school concepts the second introduces algebra and algebraic notation. Geometry, probability and statistics are included. Advanced seventh grade classes can use both books in one year. The texts are also available in Spanish editions.

Success with Mathematics, 1972, Fleenor, O'Daffer, Ellis, Eicholz. 7 - 9. *

This series for low achievers promotes self-confidence and achievement, according to the authors. Concepts are presented in learning modules with a motivational preliminary stage, a structuring stage, a practice stage, and occasional project cards. Book 1 presents a background in arithmetic. Book 2 deals primarily with applications.

Individualizing Mathematics, 1970, Foley, Basten, Bower, Jacobs, Burke, Smith. 7 - 9. *

Non-graded texts form a basal program in a four-part sequence: motivational strand, mainstream strand, in-depth topics strand and testing program. The text is designed for average and below-average students, according to the authors.

Unified Mathematics, I, II and III, Fehr, Fey, Hill. 7 - 9. *

This series is primarily for superior college-bound students. Course I includes finite number systems, relations and mappings, solution sets of open sentences, algebraic structures, lattice points and figures in a plane, transformations, probability and number theory. Course II covers measure theory, power sets and set structures, logic, groups, coordinate geometry, radicals, bounds, descriptive statistics and graphs. Course III includes matrices, metric geometry and perpendicularity, congruence, dilations, polynomials, factoring, quadratics, probability, circular functions and vector spaces. Course IV is in preparation now. Students completing the series will be able to proceed to a calculus course. The program is mathematically sophisticated and is written in an interesting manner. The various branches of mathematics are truly "unified." The number and type of exercises seem to be appropriate for superior students. (1974)

Mathematics: A Modern Approach, First Course and Second Course, Revised Edition, 1971, Wilcox, Yarnelle. 7 - 9. *

This is a two-year sequence in which the first course prepares the student for algebra and the second course covers a minimal algebra program and prepares the student for a non-rigorous geometry course. Motivational topics include number bases, flowcharting, trigonometry and vectors. The approach is straightforward.

Addison - Wesley Publishing Company

Mathematics I and II: Concepts, Skills and Applications, 1974, Krause, Brumfiel. 7 - 9. *

These texts are for students pursuing math in high school. Mathematics I aims to develop an intuitive sense for the role of geometry in mathematics. Number systems, computation and structure are also studied. Mathematics II provides additional work in these areas with a definite pre-algebra orientation. Probability models, flowcharts, applications, estimations and sets are also presented.

Basic Modern Mathematics: First Course and Second Course, 1969, Eicholz, O'Daffer. 7 - 8. *

This series is for low achievers. Supplementary exercises and tests are available.

Modern General Mathematics, 1969, Eicholz, O'Daffer. 7 - 9. *

Although the material is about sixth-grade level, the problems deal with topics of interest to older students. The text offers an opportunity to develop computational skills in the areas of whole numbers, fractions, decimals and percent. (1974)

Basic Mathematics: A Problem-Solving Approach, 1963, O'Malley. 7 - 12. *

These five programmed texts for the slower student stress understanding concepts. The fundamental ideas of arithmetic and computational skills are included.

Enrichment Topics in Basic Mathematics, 1964, O'Malley. 9 - 12. *

This extension of Basic Mathematics covers the topics of geometry, graphing, trigonometry, squares, square roots, statistics, probability, and other number bases.

Business and Consumer Mathematics, 1973, Saake. 9 - 12.

This text is a review of arithmetic, followed by a standard course in business math.

Mathematics with Business Applications, 1969, Skeen, Wheeler, Johnson. 9 - 12. *

This text provides a course for terminal high school students who have completed a year of general math or a year of algebra with limited success. Review of computation systems of measurement, interpretation of data, and business applications are included.

Introduction to Technical Mathematics, 1969, Washington. 9 - 12. *

A review of arithmetic precedes topics in algebra, geometry and trigonometry. High school algebra is not a prerequisite for this text. Applications to electronics, mechanics, machine design, civil engineering, architecture, physics, chemistry and data processing are included.

Addison - Wesley Publishing Company

Algebra: A Modern Introduction, 1973, Keedy, Bittinger. 9 - 12. *

These twelve consumable booklets constitute an algebra course over two years. By selecting certain booklets, the teacher can design a basic arithmetic course, an algebra course with quadratics, or a combination course. The series seeks to develop understanding, as well as skills, without excessive formalism. Behavioral objectives are written in the margins. Emphasis is on applied algebraic problems.

Series in Mathematics Modules, Abion, Blackman, Giangrasso, Siner. 9 - 10. *

These 5 paperbacks presenting the concepts and skills of a first-year algebra course use an intuitive, non-rigorous approach. The texts are aimed at technical, vocational or general education students. The skills of algebra are stressed. The series is well-suited for an individualized program, according to the publisher.

A Programmed Course in Basic Algebra, 1971, Beck, Trier. 10 - 12.

This is a programmed approach to intermediate algebra with many exercises. A summary text is available.

Algebra, An Algorithmic Treatment, Iverson. 9 - 10.

This algebra text employing the APL computer language uses arrays throughout the course.

Essentials of Basic Mathematics, Second Edition, 1973, Washington, Boyd, Plotkin. 9 - 12. *

This text discusses elementary algebra with chapters on geometry and trigonometry.

Essentials of Algebra, 1973, Washington, Boyd, Plotkin. 9 - 12. *

This text is a review of algebra.

Essential Mathematics: A Modern Approach, 1972, Keedy, Bittinger. 10 - 12. *

This text, covering arithmetic, a minimal course in intermediate algebra, numeric trigonometry and the slide rule, places an emphasis on understanding without emphasis on set notation and theory. The paperbound book includes many exercises.

Algebra, Second Edition, 1971, and Algebra and Trigonometry, Second Edition, 1971, Johnson, Lindsey, Slesnick, Bates. 9 - 12. *

These texts are generally for the college-bound student. Algebra interrelates the structure of the real number system and algebraic skills. Probability and flowcharts are introduced early in the text. Algebra and Trigonometry introduces complex numbers, elementary functions, series, induction, logic and vectors. (1974)

Addison - Wesley Publishing Company

Algebra: Individual Resource Units, 1971, Johnson, Lindsey Slesnick. 9 - 10.

These are five paperback extracts from Algebra: proof in algebra, roots, rational expressions, polynomials, equations and inequalities. The booklets are good for enrichment or review. (1974)

Geometry: A Modern Approach, 1968, Wilcox. 9 - 12. *

Prepared for an average student, the program makes provisions for 'teaching up' to students of high ability. Plane and space geometry are integrated. Examples are concrete.

Geometry, Second Edition, 1971, Moise, Downs. 10 - 11. *

Metric postulates, concepts of space geometry and coordinate systems are introduced early in the course and used consistently thereafter. Some problems are quite difficult. One basic purpose of the book is to teach students to read math. Much of the material must be worked out by the student. The text is also available in Spanish. (1974)

An Introduction to Transformational Geometry, 1971, Eccles. 9 - 12. *

Properties of the basic transformations, dilations, similarities and affinities are discussed. The publishers recommend the text for use in the latter part of the usual geometry course, as part of a second-year algebra course or as part of a pre-calculus math course.

Modern Algebra and Trigonometry, Second Edition, 1968, Vance. 11 - 12.

The nature of mathematics as a logical system, matrices and vectors are discussed in the one or two semester course. The text is also available in a Spanish/English bilingual edition.

Modern College Algebra, Vance. 11 - 12.

This one-semester course preceding calculus formalizes the study of algebra. Matrices, probability and vectors are included. It is also available in a Spanish/English bilingual edition.

Introduction to Modern Mathematics, Second Edition, Vance. 11 - 12.

This book is designed for a two-semester course following second-year algebra and includes all the material of the author's book Modern Algebra and Trigonometry plus an introduction to calculus and a discussion of conic sections. It is also available in a Spanish/English bilingual edition.

Plane Trigonometry, Second Edition, 1964, Spitzbart, Vardell. 11 - 12.

Plane trigonometry as a study of functions is presented.

Trigonometry, Second Edition, 1969, Vance. 11 - 12. *

The analytic as well as the computational part of trigonometry is stressed. Emphasis is placed on graphing applications of circular functions and general inverse function concepts.

Addison - Wesley Publishing Company

Analytic and Vector Geometry: A Bridge to Calculus, 1969, Eccles, Vance, Mikula. 12. *

A variety of one-semester courses for the pre-calculus student are presented in this text. Some topics included are analytic geometry, vector geometry, sequences, tangents, area functions and transformations in the plane.

Analytic Geometry, Third Edition, 1967, Fuller. 12.

This text provides a preparation for calculus. By slighting a few traditional topics, more time is available for "new" topics of use to the future calculus student, according to the author.

Analytic Geometry, 1966, Pratter, Morrey. 12.

This text is designed primarily to prepare the student for calculus. It is characterized by logical development and a normal emphasis on theory. Analytic geometry is developed by coordinates, but vectors are introduced and used. Also included are inequalities in one and two variables, an introduction to sets, inverse functions and relations.

The Elementary Functions, 1968, Fleenor, Shanks, Brumfiel. 12.

This foundation for calculus covers polynomial, rational, exponential, logarithmic and trigonometric functions. Analytic geometry of the plane and space, conic sections and polar coordinates are included.

Pre-Calculus Mathematics, Second Edition, 1972, Shanks, Brumfiel, Fleenor, Eicholz. 11 - 12. *

Part I deals with functions and probability with an emphasis on graphing functions, reading graphs, and computational skills. Part II involves analytic geometry with an emphasis on graphing techniques and physical applications.

Calculus with Analytic Geometry: A First Course, Protter, Morrey. 12. *

This text uses an intuitive approach with many illustrations and physical applications. Hyperbolic functions are treated in an appendix. It is also available in a Spanish/English bilingual edition.

Elements of Calculus and Analytic Geometry, Second Edition, 1972, Thomas. 11 - 12. *

This is the high school edition of the Thomas text. Topics discussed include functions, limits, integration, derivatives, hyperbolic functions, infinite series, analytic geometry in Cartesian and polar coordinates and differential equations. Special attention is given to practical applications such as maxima, minima, volumes, center of mass, centroid, and work. Many problems are included, but the emphasis on theory is minimal. (1974)

Calculus and Analytic Geometry, Fourth Edition Complete, 1968, Thomas. 12. *

Addison - Wesley Publishing Company

Milwaukee Area Technical Mathematics Series, McHale, Witzke. 11 - 12. *

Four paperbound texts form the basis of a 2-year technical math course. The program assumes one year of introductory algebra and a year of geometry. Manipulative skills and the basic mathematical models used in science are emphasized. Basic algebra, calculation and the slide rule, basic trigonometry and advanced algebra are discussed.

Mathematics in the Modern World, 1973, Triola. 11 - 12. *

This text is well-suited for college-bound students with one year of algebra who are not math-oriented. It includes logic, set theory, mathematical systems, algebra, calculus, probability and statistics, computers and mathematics in other fields.

Probability: A First Course, Second Edition, 1970, Mosteller, Rourke, Thomas. 11 - 12. *

This one-semester course for students with at least 2 years of general math and an introduction to geometry includes projects on the computer.

Probability with Statistical Applications, Second Edition, 1970, Mosteller, Rourke, Thomas. 11 - 12. *

Students should have completed 2 years of high school algebra. The text includes such topics as random fluctuation, regularities, applications of probabilistic math models, and the use of models to interpret and predict experimental results.

Statistics by Example, Mosteller, Kruskal, Link, Pieters, Rising. 7 - 12.

These four paperbound texts are designed as an introduction to statistics. Each is appropriate for a different level of mathematical sophistication. Exploring Data concerns organizing data and elementary probability. Weighing Chances includes random numbers, probability models, scatter and residues. Detecting Patterns presents normal distribution, chi-square test and regression methods. Finding Models emphasizes building new structures. The keynote is real problems with real data.

An Introduction to Computers and Problem Solving, 1969, Hull, Day. 9 - 12. *

This text explains the function of computers on an elementary level. It includes a wide variety of problems using FORTRAN. (1974)

Computer Methods in Mathematics, 1969, Albrecht, Lindberg, Mara. 10 - 12. *

The purpose of this text is to teach how to write computer programs using a time-sharing system and how to use this knowledge to solve problems. Both BASIC and FORTRAN languages are included. One year of algebra is the only preparation necessary for this text.

Addison - Wesley Publishing Company

Basic FORTRAN IV Programming: Self-Instructional Manual and Text, 1968, Healy. 10 - 12.

This text introduces the student to the capabilities of computers and to computer programming. It assumes a knowledge of first-year algebra.

FORTRAN IV Primer, 1966, Organick. 10 - 12.

The introductory concepts of computers and construction of algorithms using flowcharts and programming are presented.

An Introduction to BASIC: A Time-Sharing Language, 1971, Lindahl. 10 - 12.

The prerequisite for this text is one year of algebra. It stresses the BASIC language itself and the concept of computer programming. An appendix on terminal procedures is included.

Basic BASIC Programming, Peluso, Bauer, DeBruzzi. 9 - 12.

This text is written for students with little or no background; it includes writing programs and running them on a remote console system.

The Computer, An Everyday Machine, 1972, Squire. 10 - 12. *

This general introduction to data processing stresses the problem-solving process in modern society and the use of the computer in this process. Projects are included.

Basic PL/I Programming, Bauer, Peluso, Gomberg. 10 - 12.

This is a self-instructional text for students with a first-year algebra background.

A Course in APL-360 with Applications, 1973, Greg. 10 - 12.

This text introduces APL through mathematics, science and engineering applications.

Probability, Bates. (MAT)

Fundamental Concepts of Geometry, 1955, Meserve.

The main concepts behind classical geometry are presented. (MAT)

Essentials of Algebra and Trigonometry, 1964, Young. (MAT)

ALLYN AND BACON, INC.
Longwood Division
Rockleigh, N.J. 07647

Secondary

Understanding the Metric System, Miller. 6 - 12.

This is a programmed text for individual instruction.

Allyn and Bacon, Inc.

Achievement in Mathematics 1 and 2. 7 - 8.

These activity-oriented texts teach both concepts and skills.

Fundamentals of Mathematics, Stein. 7 - 12.

This multi-level, multi-purpose text is suitable for general math, consumer math, commercial arithmetic, or shop or vocational math. Sample exercises, reviews and tests are included.

First Course in Fundamentals of Mathematics, Stein. 7 - 9.

Second Course in Fundamentals of Mathematics, Stein. 7 - 12.

This is a "practical and relevant" sequence for general math courses.

Refresher Mathematics, Stein. 7 - 12.

This supplementary drill book emphasizes arithmetic and consumer applications and includes inventory, diagnostic, achievement and maintenance tests as well as practice and review material. It is available as a Spanish/English bilingual edition called Repaso Matemático.

Practical Applications in Mathematics. 9 - 12.

This workbook is designed to supplement any basic text in general math.

Algebra One, Hayden and Finan. 9 - 10.

This text, prepared for average introductory classes, may be used with either traditional or modern methods. Special projects are included in each chapter.

Programmed Algebra, Sperry. 9 - 10.

Algebra Two with Trigonometry, Hayden, Fisher. 10 - 12.

This modern view of intermediate algebra uses the concept of function as an underlying theme.

Geometry, Fischer, Hayden. 10 - 12. *

This text considers plane, coordinate and solid geometry simultaneously, stressing the purpose and structure of the subject as a whole. Supplements on set theory, topics of algebra, and special projects are included.

Informal Logic, 1967, Kenelly.

Symbolic logic is presented with a math orientation that presupposes only a knowledge of high school algebra. (MAT)

AMERICAN BOOK COMPANY
450 West 33rd Street
New York, New York 10001

Elementary

Mathematics in Action, Kane, Oesterle, Deans, McMeen, Beigel, Evans, Fejfar, Goodfellow, Jackson, Hill. Levels 1 - 8. *

This non-graded series with a gradual pace provides concrete models and drills. Non-verbal dialogue leads the pupil to discover generalizations. The series includes operations with whole and rational numbers. Books 1 and 2 are available as Lab texts.

Secondary

Fundamentals of Algebra: A Simplified Approach, Peters, Schaaf. 8 - 12. *

This is a self-teaching text with short learning segments reviewing the basic arithmetic skills and covering first-year algebra. The reading level is below the grade level, and the style is expository.

Fundamentals of Geometry: A Simplified Approach, Peters, Schaaf, Calloway. 9 - 12. *

This standard course at average reading level uses algebraic methods to simplify proofs, provides many diagrams and figures and introduces space geometry early in the text.

AMERICAN FEDERATION OF INFORMATION PROCESSING SOCIETIES, INC.
210 Summit Avenue
Montvale, New Jersey 07645

Secondary

The Quiet Revolution.

This pamphlet describes the early history and present impact of computers.

Facts on Computer Careers.

This pamphlet covers the types of positions and training available in the computer field.

APPLETON - CENTURY - CROFTS
440 Park Avenue South
New York, New York 10016

Secondary

Basic Algebra I: Principles and Practice, 1969, Selby, Frederick. 10 - 12.

This is a self-instructional review of algebra suitable for secondary students.

Abstract Mathematical Systems, 1964, Dinkines. 12.

This text is for very advanced students. (MAT)

Elementary Theory of Sets, 1964, Dinkines. 11 - 12.

This book assumes a background of one year of algebra and one year of geometry. (MAT)

ARCO PUBLISHING COMPANY
219 Park Avenue South
New York, New York 10003

Elementary

Let's Explore Mathematics, Marsh. 1 - 6. *

These four books form an enrichment program involving sorting, matching, measuring, estimating and counting, basic operations and graphs, fractions, maps, and introductory geometry. Historical background and vocabulary are given in each book.

Secondary

Speed in Basic Math, Macomber.

This is a self-teaching course in basics.

An Introduction to Sets, Groups and Matrices, Balfour. 10 - 12.

The fundamentals of modern math are presented. A basic high school background is assumed.

Introduction to Calculus, Baker. 11 - 12.

This text includes examples, problems and exercises.

Modern Statistics, Goodman. 11 - 12.

This book presents the basic principles, including frequencies, probabilities, binomial, poisson and normal distribution, sampling theory, analysis, variance, regression, correlation and chi-square.

ARCO PUBLISHING COMPANY

Introduction to Mathematics, Baker.

The Magic of Numbers, Lamb.

This is a collection of puzzles, fallacies, games and tests.

Mathematics Makes Sense, Lewis.

BANTAM BOOKS, INC.
271 Madison Avenue
New York, New York 10016

Secondary

Mathematics Tables and How to Use Them, 1964, Smith. (MAT)

BARNES AND NOBLE PUBLISHERS
575 Madison Avenue
New York, New York 10022

Secondary

College Geometry, 1962, Court.

This is a reference text on plane geometry. (MAT)

Analytic Geometry, 1963, Oakley.

This is an outline of a first course in plane and solid analytic geometry designed for self-instruction and review. It contains proof of theorems, illustrative problems and solutions. (MAT)

BEHAVIORAL RESEARCH LABORATORIES
Ladera Professional Center
Box 577
Palo Alto, California 94300

Elementary

Readiness in Math, Sullivan. K - 1. *

Children learn by discovery about the numbers from zero to nine, solving simple equations, and adding and subtracting one-digit numbers. A giant demonstration book, number cards, a number chart and an easel and storage case are included.

Sullivan Basal Mathematics Program, Sullivan. 1 - 6. *

These 37 texts using programmed learning have a non-verbal approach to operations with whole numbers, fractions, and decimals. They are not correlated with grade levels.

Sullivan Mathematics Kits, Sullivan. 1 - 6. *

These six kits strengthen computational skills with whole numbers, fractions and decimals. The programmed textbooks are also suitable for remedial programs at higher grade levels, according to the publisher.

Sullivan Mathematics Laboratory, Sullivan. 1 - 6.

This is a programmed system for teaching computation with whole numbers, fractions, and decimals. It includes Fundamentals of Mathematics (basic text), Focus on Mathematics series (12 books). A non-verbal approach is used.

Secondary

Introduction to Modern Mathematics, Hancock, Olken, Seymour. 7 - 8. *

A programmed format is used stressing problem-solving. The text includes numeration systems, sets, geometry, factors and primes, exponents, rational numbers, ratio and proportion, percent, number sequences, graphing, statistics and probability.

The Consumer Mathematics Series, Knowles. 7 - 12. *

These seven texts are to be used as a main text or supplements, independently or in a series. Vocational Opportunities and Lifetime Earnings introduces statistics in the context of choosing a career. The Pay Check provides computational practice. The Household Budget teaches measurement, area and computation. The Wise Buyer includes graphs, tables, tax and interest computations. The Income Tax emphasizes computation. Insurance includes principles, kinds of insurance, more computation with percents. Investment discusses the basic characteristics of sound investment. (1974)

Statistics, Kinchla. 11 - 12. *

This programmed course stresses the statistical interpretation of data and logic of statistical inference. The central theme is the concept of a sampling distribution.

W. A. BENJAMIN
2 Park Avenue
New York, New York 10016

Secondary

Matrices and Linear Systems: A Programmed Introduction, Merriman, Sterrett. 10 - 12.

Computation is stressed. Systems of linear equations and vector-space concepts are studied.

GINN - BLAISDELL COMPANY
275 Wyman Street
Waltham, Massachusetts 02154

Secondary

Introduction of Logic and Sets, 1965, Christian.

This is an introduction to the basic ideas, terminology and notation of logic and sets. (MAT)

The Mathematics of Matrices, 1965, Davis.

The algebra of matrices is developed. The ability to interpret and apply matrices is stressed. (MAT)

Topics in Calculus, Lowengrub, Stampfli. (MAT)

Foundations in Modern Mathematics, 1967, May. (MAT)

Programming with USA Standard FORTRAN and FORTRAN IV, 1969, Spencer. * (MAT)

Analytic Geometry, Third Edition, 1963, Steen, Ballou. (MAT)

First Course in Mathematical Logic, 1964, Suppes, Hill. (MAT)

Mathematics: The Study of Axiom Systems, 1964, Witter. (MAT)

BOOK-LAB, INC.
1449 37th Street
Brooklyn, New York 11218

Elementary

Picture-Graphs, Pratt. 5 - 9.

This booklet teaches coordinates in math by forming pictures.

Map-Making, Tannenbaum, Stillman.

Measurement and graphs are presented.

Mathematical Shapes, Ruchlis, Milgrom.

Prisms, pyramids, cubes, octahedrons, and icosahedrons are discussed.

Mirrors, Ruchlis.

Projects teach geometric concepts.

Polyhedral Shapes, Bassetti, Ruchlis, Malament.

Descriptions for making shapes are given.

Additional games and lab materials.

CAMBRIDGE UNIVERSITY PRESS
32 East 57th Street
New York, New York 10022

Secondary

Polyhedron Models, Magnus, Wenninger. 7 - 12.

Instructions for making all known regular and uniform polyhedra and some stellated forms are given.

Communicating with a Computer, Bolt, Wardle. 7 - 12.

No prior knowledge is assumed. Principles are introduced by a series of examples and diagrams.

We Built Our Own Computers, 1966, Bolt.

This is a description of computer design on a high school level. (MAT)

Topics in Recreational Mathematics, 1966, Cadwell. 12.

This is a good source book. (MAT)

A Mathematician's Apology, 1967, Hardy.

This book presents the background of the life of a 'don' at Oxford and Cambridge. (MAT)

Fallacies in Mathematics, 1959, Maxwell. (MAT)

A Gateway to Abstract Mathematics, 1965, Maxwell.

This text 'bridges the gap' between classical and modern mathematics. (MAT)

CHELSEA PUBLISHING COMPANY
159 East Tremont Avenue
Bronx, New York 10453

Secondary

Geometry and the Imagination, 1952, Hilbert, Cohn-Vossen.

This book describes how to gain insight and intuitive understanding and how to use this to obtain mathematical results. (MAT)

THE CHEMICAL RUBBER COMPANY
18901 Cranwood Parkway
Cleveland, Ohio 44123

Secondary

CRC Standard Mathematical Tables, Eighteenth Edition, 1970.

This reference aid contains data for use in algebra, geometry, trigonometry, calculus, statistics, differential equations, finance and investment and statistical analysis. (MAT)

CONTINENTAL PRESS
Elizabethtown, Pennsylvania 17022

Elementary

Modern Mathematics, Filano. K - 8. *

This text develops proficiency in new concepts and traditional skills. Emphasis is placed on vocabulary and a modified discovery approach. It may be used as a complete program in itself or as a supplement. (1974)

Playing with Numbers. K. *

This is a traditional approach. 24 plates for liquid duplicating are included.

Learning New Skills in Arithmetic. 1 - 6. *

A modern approach is used in this series for liquid duplicating.

We Work with Numbers and My Number Book. 1 - 2. *

A traditional approach is used in this series for liquid duplicating.

Reading Problems in Mathematics. 6. *

This book is for liquid duplicating. Skill areas include whole number operations, fractions, decimals, percentage, ratio, area, perimeter and time.

Numberland Series. 1 - 6.

A traditional approach is used in these six books for liquid duplicating.

A New Look at Common Fractions.

This three-part series uses a modern approach to fractions. It is ungraded and designed for liquid duplicating.

Arithmetic - Step-by-Step, Kits A and B. 1 - 6.

Liquid duplicating masters and diagnostic tests are included. The kits provide a developmental program for remedial, special education, ungraded classes and individualized programs.

CONTINENTAL PRESS

Secondary

Learning New Skills in Mathematics. 7 - 8. *

A modern approach is used in this series for liquid duplicating.

Junior High Arithmetic. 7 - 8. *

A traditional approach is used in this series for liquid duplicating.

A New Look at Decimals and A New Look at Percentage. 7 - 12. *

These two books are for liquid duplicating.

General

Special Education Series, Cockerille, Wenger. Levels 1 - 3.

This series is for retarded and academically handicapped children. A simple, direct, non-verbal approach is used. Workbooks include number concepts, measurement, U. S. money, time and useful language.

Other workbooks are available.

CONTROL DATA INSTITUTE
P. O. Box 0
Minneapolis, Minnesota 55440

Secondary

Computer Concepts, Smith.

This programmed text for beginners uses flowcharts and FORTRAN.

Bases of FORTRAN, Smith.

This self-teaching introduction includes games, puzzles, and math problems.

School Computer Use Plan (SCUP).

This is a course for small schools and colleges with no time-sharing facilities. Students use prepunched computer cards to make their programs and mail them to CDI to be run.

Computer Explorer Series in FORTRAN and BASIC.

Individual studies of applications from astrology, numerology and palm reading to gaming, linear programming, statistics and primes are included.

CONTROL DATA INSTITUTE

Computer Programming Using BASIC.

These seven audio-visual units include elephant numbers, eight chests of gold, rugby cup games, tainted tea, and Picadilly fund.

A Visual Approach to BASIC, Smith.

This is a self-instructional guide/text.

CREATIVE PUBLICATIONS
3977 East Bayshore Road
Palo Alto, California 94303

Elementary

Happy Math, Chilcote, Blaine, Nason. K - 3.

This is a looseleaf of games and activities.

M Cubed, Martin, Davis. 1 - 6.

These are teaching aids for the mathematics laboratory.

Let's Explore Mathematics, Marsh. 1 - 6.

These four books discover and explore the structure of number systems.

Tangle Tab[illegible], Barnes. 1 - 9.

This book consists of worksheets and puzzles involving addition and multiplication of whole numbers.

Tangramath, Seymour. 1 - 10.

These exercises on three levels use the concepts of shape, congruence, similarity and area.

Crossnumber Puzzles, Hestwood, Orf, Huseby. 3 - 9.

These puzzles provide practice in basic computational skills with whole numbers, fractions, decimals and percents. It is keyed to objectives.

Intermediate

Mathemagination, Marcy. 4 - 9.

These six enrichment books consist of puzzles and activities for the individual or class. Activities are keyed to objectives. Riddles, secret messages and games increase student interest. Diagnostic speed tests are also included. Topics include operations with whole numbers, fractions, number theory, sets, number bases, decimals, percent, geometry, measurement, and Cartesian coordinates. (1974)

CREATIVE PUBLICATIONS

Number Sentence Games, Seymour, Holler, Collins. 4 - 10.

This book consists of worksheets involving operations, order of operations and grouping in a game-type atmosphere.

Aftermath, 1971, Seymour, Laycock, Holmberg. 5 - 9.

These are four volumes of simple, self-explanatory solutions with a cartoon format, puzzles, and games. Duplicating masters are available. (1974)

Money Matters, Silvey. 5 - 9.

Problem solving is explored.

String Sculpture, Winter. 5 - 12.

Creative Constructions, Seymour, Schadler. 5 - 12.

Line Designs, Seymour, Snider. 5 - 12.

This enrichment book includes designs made by line segments and curve-stitching.

Notable Numbers, Stokes. 5 - 12.

This text discusses unusual number relationships, patterns and curiosities in worksheet forms to stimulate and motivate students. Topics include the history of numbers, perfect numbers, Fibonacci numbers, Goldbach's conjecture, and Pascal's triangle. The book is reproducible.

Daily Chores, Allen. 6 - 10.

These worksheets and masters for low-ability junior high students include games and activities.

Graph Gallery, Boyle. 6 - 10.

Graphs of equations, ordered pairs, and inequalities compose simple pictures.

Secondary

My Computer Likes Me, Dymax. 7 - 10.

This is an informal workbook in BASIC. It includes population problems.

Mathematics Contest Problems Book, Brousseau. 7 - 12.

Two levels of problems are given.

Patterns in Space, Beard. 7 - 12.

Projection, isometric techniques, reflection, inversion and perspective. This book is a fascinating source of recreational materials for almost any secondary math course. Conic sections, the nine-point circle, cycloids, regular polygons and constructing polyhedra are just a few of the topics included. (1974)

CREATIVE PUBLICATIONS

Finite Differences, Seymour. 7 - 12.

These are worksheets on problem-solving. Most problems deal with series intuitively. (1974)

Eureka, Seymour, Gidley. 7 - 12.

This enrichment book includes cartoons, problems and curiosities.

Accent on Algebra, Boyle, Juarez. 8 - 12.

Enrichment games and puzzles are presented.

Mathematics in the Modern World. 8 - 12.

This is a reference text.

Portable Plotting, Boyle. 10 - 12.

This is an enrichment book suitable for advanced algebra classes or mathematics clubs. It includes work with conics.

General

Pic-a-Puzzle, Schadler, Seymour. 1 - 12.

Geometric puzzles are given in this text.

Seeing Shapes, Ranucci. 1 - 12.

Symmetry, rotation, reflection, congruence, and perspective drawing are discussed. Paperfolding, codes and topological notations are also introduced and studied. (1974)

Starting Points, Banwell, Saunders, Tahta. 1 - 12.

Situations from which mathematics can be investigated are given.

THOMAS W. CROWELL COMPANY
666 Fifth Avenue
New York, New York 10019

Elementary

The Crowell Young Math Books, Bloomfield. 1 - 6.

These picture books present math concepts. Topics include bigger and smaller, circles, computers, the ellipse, estimation, fractions, graphs, probability, right angles, paperfolding, topology, intuitive geometry, weighing and balancing, symmetry, Venn diagrams, statistics, and negative numbers.

THOMAS W. CROWELL COMPANY

Secondary

A Miscellany of Puzzles, 1965, Barr. 9 - 12.

This text introduces deeper concepts in simple terms. (MAT)

Experiments in Topology, 1964, Barr.

Delights of the Slide Rule, 1964, Clason. 9 - 12.

This is a comprehensive discussion of operations, various types of slide rules and problems. (MAT)

Leonard of Pisa, 1969, Gies. 9 - 12.

Leonard Fibonacci and mathematics of the Middle Ages are investigated. (MAT)

Mathematics and the Physical World, 1959, Kline. 9 - 12.

This is a survey of the growth and interaction of science and math. (MAT)

Triangles, 1962, Neely. 9 - 12.

Instructive figures are used for pre-trigonometric mathematics. (MAT)

CUISENAIRE COMPANY OF AMERICA, INC.
12 Church Street
New Rochelle, New York 10805

Elementary

Graphs and the Child, Papy. K - 1.

This source book for teachers contains activities and short lessons to introduce graphs.

Discovering Truth in Numbers, Hunter. K - 1. *

This is an introduction to mathematics through games sets and the use of Cuisenaire rods.

Opening Doors in Mathematics, Genise, Kunz. K - 2. *

Cuisenaire rods are used with worksheets and activities emphasizing manipulative models to introduce addition, multiplication and inverse operations.

Student Activity Cards for Cuisenaire Rods, Davidson, Fair, Galton. K - 8.

Games and challenging activities introduce and reinforce basic arithmetic operations.

CUISENAIRE COMPANY OF AMERICA, INC.

Modern Mathematics Made Meaningful, Kunz. K - 8.

This study kit for remedial or tutorial work in groups of 1 - 3 introduces the concepts, terminology and techniques of modern and traditional math. The set includes 50 topic cards.

Introducing Geoboards, Trivett. 1 - 3.

These activity cards introduce the concepts of geometry, including squares, rectangles, triangles and other polygons, symmetry, rotation and reflection.

Exploring Cubes, Squares and Rods, Trivett. 1 - 3.

These activity cards explain games and activities exploring the areas of length, area, volume, sorting, comparing, and equivalences. The materials are metric.

RelationShapes, Perl. 1 - 5.

This kit consists of geometric attribute shapes accompanied by activity cards. Topics studied include logic and sets, metric measurement, tangram games and puzzles, identifying polygons, tessellations, transformations, matrices, nesting, symmetry and polyominoes.

Using the Cuisenaire Rods: A Photo/Text Guide, Davidson. 1 - 9.

This book includes the study of relationships, addition and subtraction of whole numbers, factors and prime factorization, fractions, division of whole numbers, ratio and proportion, measurement, sets, signed numbers, introduction to algebra, word problems, inequalities and permutations.

Geocards, Trivett. 3 - 9.

These activity cards and geoboards offer a comprehensive study of geometric topics.

SMP - School Mathematics Project. 4 - 9. *

These four booklets developed in England prepare the student for secondary mathematics through problems from everyday experiences. It emphasizes student participation through games, puzzles and problems. Reading is at a minimum, and opportunities encourage discovery learning.

General

Topics from Mathematics. 3 - 12.

Cubes, Pielker. This book encourages the construction of paper models. It studies measurement (perimeter, surface area, cube volume) and symmetry.

Statistics, Pielker. The fundamentals of statistics as a science are presented.

Circles, Mold. Intersecting lines, tangents, formation of circles, and intersecting circles are discussed.

CUISENAIRE COMPANY OF AMERICA, INC.

Topics from Mathematics. 3 - 12. (continued)

Towards Probability, Fielker. Experiments introducing probability are given.
Tessellations, Mold. This book relates math and art through the use of translation and rotation.
Solid Models, Mold. Instructions to build the five platonic solids are given.
Computers, Fielker. This is an introduction to coding systems using punched cards and tapes.
Triangles, Mold. This book investigates triangles through geoboards, paperfolding and drawings.

Cosmic View: The Universe in Forty Jumps.

This is a graphic journey of numbers from the edge of infinity to the nucleus of the atom. Illustrations are included with the text and captions.

Mathematics Illustrated Dictionary, Bendick, Levin.

This illustrated dictionary covers 200 old and new terms in simple language.

Mathematics and the Child, Papy.

This resource book for teachers provides an account of responses to mathematics introduced with manipulative devices and colored graphs. Concepts of the basic arithmetic operations, equalities and inequalities, decimals, fractions, negative numbers and sets are introduced.

Rods, squares and cubes, games, films, and other supplementary materials are also available.

CUMMINGS PUBLISHING COMPANY, INC.
2727 Sand Hill Road
Menlo Park, California 94025

Secondary

Mathematics and the Modern World, Triola.

This is an illustrated history.

First Course in Algebra. *

Intermediate Algebra, Wyant, Stakkestad. *

Series in Mathematics Modules. 10 - 12. *

These five modules for the review of algebra discuss operations, equations, lines, factoring, algebraic fractions, quadratic equations and curves.

Geometry, Wilcox.

Elementary Functions: A Study of Pre-Calculus Mathematics, Trivieri.

CURRICULUM DEVELOPMENT ASSOCIATES, INC.
Suite 414
1211 Connecticut Avenue, N.W.
Washingron, D. C. 20036

Elementary

Patterns and Problems, Wirtz, Botel, Beberman. 1 - 3.

These three student workbooks include an introduction to numbers, addition and subtraction, multiplication and division of whole numbers and fractions, measurement, primes, graphs, perimeter, and area. The exercises are designated to be done at home, at school or as teamwork. Illustrations and exercises lead students to make their own discoveries. The open-ended curriculum develops a positive attitude toward mathematics through creative problem solving. The presentation is essentially non-verbal. (1974)

Individualized Computation, Wirtz Botel, Beberman. 1 - 3.

These are three workbooks designed to accompany Patterns and Problems. The focus is on the understanding of arithmetic and the development of basic computational skills through arithmetic experiments. Concepts are developed by proceeding from the manipulative to the representational to the abstract. (1974)

My Progress Book, Wirtz. 1 - 3.

This is a management system booklet of tests for use with Patterns and Problems. (1974)

Developing Insights into Elementary Mathematics, 1968, Wirtz, Botel, Beberman. 1 - 8.

This two-volume set includes pupil work pages (looseleaf) with manipulative, representational and abstract activities ranging from beginning counting to using 3-digit multipliers and 3-digit divisors.

Drill and Practice at the Problem-solving Level, Wirtz. 1 - 6.

This resource book includes 215 reproducible activity pages in three areas: manipulative, representational and abstract activities. Task cards, report forms and summaries are different types of activities given. Opportunities for independent work are maximized by the absence of large amounts of reading material. (1974)

THE JOHN DAY COMPANY
257 Park Avenue South
New York, New York 10010

Secondary

The Magic House of Numbers, 1957, Adler. 9 - 12.

Curiosities, riddles, tricks, and games explain the basic whys and hows of our number system. (MAT)

THE JOHN DAY COMPANY

The New Mathematics, 1958, Adler.

Interesting concepts of modern mathematics are built using elementary algebra and plane geometry. (MAT)

Thinking Machines, 1961, Adler. 10 - 12.

The theory of electronic computers is explained. (MAT)

The Elementary Mathematics of the Atom, 1965, Adler. 10 - 12.

High school algebra is used to explain the theory of the structure of the atom. Difficult parts may be skipped. (MAT)

Probability and Statistics for Everyman, 1963, Adler.

This book explains the essential and prerequisite concepts needed to understand and use the laws of chance. (MAT)

A Look at Arithmetic, Adler. 7 - 12.

This book is an arithmetic-refresher and idea-builder. (MAT)

The Impossible in Mathematics, 1967, Adler. (MAT)

Groups in the New Mathematics, 1967, Adler. (MAT)

A New Look at Geometry, 1966, Adler. (MAT)

DELMAR PUBLISHERS, INC.
Mountainview Avenue
Albany, New York 12205

Secondary

Basic Mathematics Simplified, 1972, Olivo, Olivo. 7 - 12. *

This is a third edition of a basic math text, keyed to seven other workbooks dealing with practical, applied problems for specific vocations. There is a great deal of exercise material that comes directly from problems met in business and industry.

Practical Problems in Mathematics for Automotive Technicians, 1972, Dwiggins. 7 - 12. *

This workbook is to be used with Basic Mathematics Simplified. Topics presented include measurements, proportions, graphing, formulas, work orders, and invoices.

DIAL PRESS
750 Third Avenue
New York, New York 10017

Secondary

New World of Mathematics, 1959, Boehm.

This book consists of excerpts from three articles in Fortune magazine. (MAT)

Mathematics in Fun and Earnest, 1958, Court.

This book requires little background, but exercises reasoning power. (MAT)

DIGITAL EQUIPMENT COMPANY
Educational Products Group
146 Main Street
Maynard, Massachusetts 01754

Secondary

Population: Self-Teaching BASIC Workbook.

Problems for Computer Mathematics.

Advanced Problems for Computer Mathematics.

BASIC Matrix Operations - Project SOLO.

BASIC Application Programs.

Programs in Math I and II, science, business and social science and plotting are available.

Introducing BASIC, Blakeslee.

This secondary level text stresses random numbers and teletype graphics.

DOUBLEDAY AND COMPANY, PUBLISHERS
501 Franklin Avenue
Garden City, New York 11531

Secondary

Computers and the Human Mind, 1966, Fink.

This is a high school level introduction to the idea of computers.

DOVER PUBLICATIONS, INC.
180 Varick Street
New York, New York 10014

Secondary

Arithmetical Excursions: An Enrichment of Elementary Mathematics, Bowers, Bowers. 7 - 12.

Magic squares, lattice methods, and casting out nines are explained.

The Japanese Abacus Explained, Yoshino.

This is an explanation of the principles of the abacus, with practice exercises and examples included.

Recreations in the Theory of Numbers: The Queen of Mathematics Entertains, 1964, Beiler.

The recreational aspects of number theory are explored. Problems are scattered throughout the book and in a supplementary chapter. All solutions are given. (MAT)

150 Puzzles in Crypt-arithmetic, 1963, Brooke.

Simple arithmetic processes and logarithms are used. (MAT)

Cryptanalysis - A Study of Ciphers and Their Solutions, 1956, Gaines.

This is an intermediate-level text. (MAT)

Cryptography, The Science of Secret Writing, Smith.

This is an elementary account.

Pillow Problems and a Tangled Tale, 1958, Carroll. 7 - 12.

72 ingenious puzzles and a story with problems are included. Solutions, wrong approaches and misleading paths are discussed. (MAT)

Amusements in Mathematics, 1958, Dudeney.

This book includes 400 puzzles in arithmetic, algebra, permutations, probability, plane figure dissection, properties of numbers. (MAT)

Best Mathematical Puzzles of Sam Loyd, Volumes I and II, 1960, Gardner. 7 - 12.

These two volumes contain a classic collection of puzzles. (MAT)

Mathematical Recreations, 1953, Kraitchik. (MAT)

Mathematical Puzzles for Beginners and Enthusiasts, 1954, Mott-Smith.

This book presents 188 puzzles from easy to difficult. Principles are explained. (MAT)

101 Puzzles in Thought and Logic, 1957, Wylie.

This introduction has a simplified explanation of general scientific method and puzzle solving. (MAT)

DOVER PUBLICATIONS, INC.

Exploring Mathematics on Your Own, Glenn, Johnson. 10 - 12.

Topics such as number systems, number theory, magic squares, the Pythagorean theorem, set theory, logic and topology are investigated. Puzzles, tricks and games are included.

100 Great Problems of Elementary Mathematics, 1965, Dorris.

The history and solution of 100 problems from five branches of mathematics are presented. (MAT)

Famous Problems of Elementary Geometry, 1956, Klein.

This sophisticated discussion of doubling the volume of a cube, trisecting an angle and squaring a circle, proves by algebraic methods that these 3 constructions are impossible using only straight-edge and compass. (MAT)

Flatland, 1952, Abbott. 7 - 12.

This science fiction classic of life in a 2-dimensional world is a political satire and also an introduction to relativity and hyperspace. (MAT)

Recreational Problems in Geometric Dissections and How to Solve Them, 1972, Lindgren.

This booklet concerns dissections as recreation.

Geometric Exercises in Paperfolding, Row. 10 - 12.

Regular polygons, circles and other curves are produced, the relationship of algebra and trigonometry is made evident.

Coordinate Geometry, Eisenhart.

This is a thorough treatment of circles, spheres, polar coordinates, conic sections, quadric surfaces, and systems of equations. Determinants are used.

A Short Account of the History of Mathematics, Ball.

The history of math from the Egyptians and Phoenicians through 19th century figures is discussed. The text often treats mathematics in detail.

History of Mathematics, Smith.

This is a two-volume detailed account of mathematics history.

Teach Yourself Calculus, Abbott.

Teach Yourself Trigonometry, Abbott.

The Master Book of Mathematical Recreations, Schuh.

Magic Squares and Cubes, Andrews.

Symbolic Logic and The Game of Logic, Carroll.

DOVER PUBLICATIONS, INC.

The Unknown Lewis Carroll, Carroll.

The Canterbury Puzzles, Dudeney.

Puzzles in Math and Logic, Friedland.

Mathematics, Magic and Mystery, Gardner.

Mathemagic: Magic, Puzzles and Games with Numbers, Heath.

Fun with Figures and More Fun with Figures, Hunter.

Mathematical Excursions, Merrill.

My Best Puzzles in Mathematics, Phillips.

Caliban's Problem Book: Mathematical, Inferential and Cryptographic Puzzles, Phillips.

New Puzzles in Logical Deduction, Summers.

Diversions and Pastimes, 1964, Abraham. (MAT)

A Concise History of Mathematics, 1948, Struik. (MAT)

Art and Geometry: A Study in Space Intuitions, Irvins.

On Mathematics: A Collection of Witty, Profound, Amusing Passages about Mathematics and Mathematicians, Moritz.

Teach Yourself the Slide Rule, Snodgrass.

How Do You Use a Slide Rule?, Merrill.

"Ten easy lessons" teach the use of a slide rule.

The Theory and Operation of the Slide Rule, Ellis.

This is an exhaustive work, according to the publisher.

How to Calculate Quickly: Rapid Methods in Basic Mathematics, Sticker.

Teach Yourself Algebra, Abbott.

Teach Yourself Geometry, Abbott.

THE ECONOMY COMPANY
P. O. Box 25308
1901 North Walnut
Oklahoma City, Oklahoma 73125

Elementary

Countdown, O'Neil. 1 - 3.

This supplementary enrichment program is individualized on tape.

THE ECONOMY COMPANY

General

Guidebook to Mathematics, Laughlin. 5 - 12.

This book is designed for low achievers. Relevant exercises in figuring interest rates, making budgets and using bank accounts are included.

EDUCATIONAL AND INDUSTRIAL TESTING SERVICE
P. O. Box 7234
San Diego, California 92107

Intermediate

Individualized Mathematics Program, Young. 4 - 9.

This is an individually prescribed instructional system based on stated performance objectives and containing assessment and diagnostic devices with correlated teaching methods and materials. The program is well-organized and records are relatively simple. A great deal of computation practice is provided. This program might also be used as a supplement or mini-course or as review. If the program is to be used as the basic text, additional activities are needed to motivate the student and provide some variety, since the materials are rather routine. (1974)

ENCYCLOPEDIA BRITANNICA
Educational Corporation
425 North Michigan Avenue
Chicago, Illinois 60611

Elementary

Math Workshop, Wirtz, Botel, Beberman, Sawyer. K - 6. *

These non-verbal basic and supplementary materials use problem-solving, a manipulative approach, and discovery. They are divided into levels. Topics at each level are structure, sets, numbers and counting, numeration, addition and subtraction, multiplication and division, functions and relations, geometry and measurement.

Mathex, Nelson, Sawyer. 1 - 6. *

This is a student-activity-oriented supplement in two sets. Topics include matching, graphing, numeration, operations, geometry and measurement.

Whole Numbers and Numerals. 2 - 6. *

These two programmed units develop the arithmetic of whole numbers and positional systems of numeration.

ENCYCLOPEDIA BRITANNICA

Ratios and Proportions. 4 - 9.

This programmed booklet teaches the fundamental operations, stressing products of means and products of extremes. Ratios are explained as rates of change.

Arithmetic of the Whole Numbers. 6 - 8. *

This programmed unit shows techniques developed step-by-step from basic definitions.

Secondary

Math Learning Center. 7 - 12. *

The center includes 206 books in 9 areas. Programmed texts in the areas of basic mathematics, whole numbers and numerals, introduction to mathematics, arithmetic of the whole numbers, introduction to modern math, preparing for algebra, ratios and proportions, introduction to verbal problems in algebra, and modern algebra are included.

Algebra 1. *

These five programmed texts use a traditional approach. Topics include irrationals, properties and structure of the number system, algebraic language and symbols, signed numbers, formulas and equations.

Basic Mathematics. *

These five programmed books make a full-year course in general mathematics.

Introduction to Mathematics. *

These four programmed books form a transitional program emphasizing developing concepts, techniques and vocabulary.

Introduction to Modern Mathematics. 8. *

These four books form a full-year, multi-track program which completes the study of pre-algebra math. They include a review of arithmetic, fractions, irrationals, and integers.

Preparing for Algebra. 8. *

Operations with fractions and decimals and exponents in solving equations are explored in this programmed text.

Modern Algebra - A First Course. 9 - 12. *

These five programmed books provide a full-year course. Topics include inequations in one and two variables, absolute value, sets, verbal problems are emphasized.

An Introduction to Verbal Problems in Algebra. 9 - 12. *

This programmed booklet offers general strategies for solving word problems.

ENCYCLOPEDIA BRITANNICA

Algebra II. 10 - 12. *

These five programmed books form a full-year course emphasizing the properties of numbers, the real number system, proof, functions, and variables. Probability and statistics are introduced.

Verbal Problems in Algebra, Part II. *

Plane Geometry. 10. *

These five programmed books include an introduction to analytic algebra and trigonometry.

Solid Geometry. 10. *

These two programmed books form a one-semester course stressing quantitative relationships.

Trigonometry. 10 - 11. *

These three programmed books form a one-semester course.

Analytic Trigonometry. 10 - 12. *

These three programmed books emphasize functions and trigonometric identities.

Introductory Descriptive Statistics.

An Introduction to Sets, Inequalities and Functions. *

The Language of Algebra: Fields and Ordered Fields. *

Mathematical Bases for Management Decision Making - Matrices and Mathematical Programming. 11 - 12.

These two programmed books teach matrix algebra and Simplex method.

Introductory Calculus, Borrow. 12.

This is a full course in differential and integral calculus of functions of one variable. The concepts of function, limit, derivative, definite and indefinite integral are used. The text is programmed.

Films on a variety of subjects and levels are available (rental fee $17 - $22). Audiotutorial and multimedia kits and filmstrips are also available.

ENGINEERING CONCEPTS CURRICULUM PROJECT
College of Engineering
State University of New York
Stonybrook, New York 11790

Secondary

The Man-Made World. 10 - 12. *

This interdisciplinary laboratory course uses current problems to teach basic engineering concepts. The limitations of computers and possibilities of controlling technology are emphasized. Operations research, probability, game theory, modeling, computer programming and logic are some of the mathematical topics. Necessary additional equipment includes an analog computer, logic circuit board and other electronic materials.

Technology<->People<->Environment. 8 - 12. *

These eight mini-courses form a complete course or may be used independently. An interdisciplinary activities approach for non-academic students aims at developing technological literacy. Math topics include using tables, graphs, computers, balancing a budget, flowcharts, an operations research introduction, measurement, logic, map-reading and binary numbers. This series presents an interesting and different approach. (1974)

FAWCETT WORLD LIBRARY
67 West 44th Street
New York, New York 10036

Secondary

Fun with Mathematics, Meyer. 7 - 12.

This is a collection of puzzles, problems, number facts and curiosities. (MAT)

THE FIBONACCI ASSOCIATION
St. Mary's College
California 94575

Secondary

Fibonacci and Lucas Numbers, Hoggatt.

This is an introduction with problems and partial solutions. Pascal's Triangle, rabbits, the Golden Section, and geometry are discussed.

THE FIBONACCI ASSOCIATION

A Primer for the Fibonacci Numbers, Bicknell, Hoggatt (eds.). 10 - 12.

This collection of articles introduces the bright high school student to Fibonacci numbers.

An Introduction to Fibonacci Discovery, 1965, Alfred.

This book presents a general approach to the discovery of mathematics through the suggestion of problems to study, how to attack the problem and some solutions. (MAT)

W. H. FREEMAN AND COMPANY
660 Market Street
San Francisco, California 94104

Secondary

Mathematics, A Human Endeavor, 1970, Jacobs. 9 - 12.

This book is subtitled "A Textbook for Those Who Think They Don't Like the Subject."

Mathematics - The Man-Made Universe, 1969, Stein. 11 - 12. *

This is an introduction to several of the principal areas of modern mathematics. Mathematical analysis is applied to a variety of numerical and geometric situations. (MAT)

Mathematics in the Modern World, 1968, Kline. 11 - 12.

These readings from Scientific American outline the nature, history, problems and applications of mathematics. (MAT)

An Elementary Introduction to the Theory of Probability, 1961, Gnedenko, Khinchin. (MAT)

A Concrete Approach to Abstract Algebra, 1959, Sawyer.

This paperback introduces the structures of abstract algebra. (MAT)

The Solution of Equations in Integers, 1961, Gelfond. 12.

The more elementary parts of the theory of equations are discussed in this paperback. (MAT)

Martin Gardner's Sixth Book of Mathematical Games from Scientific American, 1971, Gardner. 10 - 12.

Twenty-five topics are covered. This is a good resource to encourage creativity.

GINN AND COMPANY
9888 Monroe Drive
Dallas, Texas 75229

Elementary

Ginn Elementary Mathematics, Scott, Immerzel, Wiederanders, MacPherson, Moulton, Ames. K - 8. *

Several learning strategies are used to guide discovery. Behavioral objectives are followed. Reading requirements are low. Computation is involved through the use of applications. Supplementary materials are available.

IMS. 1 - 9. *

This seems to be a well-organized individualized program with 11 content strands on 9 levels. Level 1 uses teacher-directed group activities. Levels 2 - 9 are individualized work. Components of the system include a storage device, placement tests, pre- and post-test, systems management guide, skill booklets (level 1) and laminated skill folders (levels 2 - 9), record-forms masters, answer keys, pencils for use in laminated folders and a teacher-training kit. Weekly seminars are planned to provide variety for students.

Secondary

Contemporary Mathematics Program (CMP). 7 - 12.

This series is geared for the average student and contains self-directed, self-correcting reviews in sections preceding exercises and problem sets. Oral and written exercises are included in each text. Supplementary materials are available.

Mathematics I and II, (CMP), Sobel, Maletsky. 7 - 8. *

Mappings are the unifying concept in these texts. Class explorations and lab experiences are included at intervals, as well as many computational exercises and applications. The strength of the series lies in the subject matter. Book I begins with the study of computer math and includes topics such as coordinate systems, congruency, probability and statistics, in addition to the usual topics of operations with rational numbers, ratios, percent, measurement, area and volume. Book II includes the study of density, irrational numbers, exponents, geometry in two and three dimensions, constructions, similarity, numerical trigonometry, equations and inequalities, and more probability and statistics. The inclusion of topics new to the student in such wide variety helps to motivate him and provide him with further computational practice. (1974)

Algebra I, (CMP), Smart, Rogalsky, Ruehmann. 9. *

The function is the unifying concept in this text using a mixture of the discovery and exposition methods. Negative numbers are studied early in the text; factoring is explained well through the use of the distributive axiom. Exercises and applications are adequate, and lab experiences are included. Coordinate geometry, probability and statistics are some of the topics included. (1974)

Geometry, (CMP), Pearson, Smart. 10. *

A system of geometry, including plane, solid, coordinate and non-Euclidean geometry, is presented. Transformations, trigonometry, topology and logic are included. Undefined terms are clearly delineated. The usual two-column proof is introduced gradually. Lab experiences are included. Constructions are considered late in the text, and solid geometry is studied separately in two chapters. (1974)

Algebra II with Trigonometry, (CMP), Smart, Holmes, Hood. 11. *

Functions and relations are the unifying concepts in this text which also includes ample exercise sets and library and lab experiences. The section on applications of conic sections is particularly good. Matrices are introduced early. Other topics include logic, complex numbers, elementary theory of circular, trigonometric, logarithmic, exponential and polynomial functions, sequences, series, mathematical induction, linear programming and probability. (1974)

Trigonometry and Related Topics, (CMP), Pearson. 11 - 12. *

The central theme in this one-semester course is circular functions and their relation to geometry and trigonometry. Both circular functions and trigonometric functions are introduced by the wrapping function. Topics include solution of triangles, vectors, complex numbers, matrices and logarithms (optional). The book is designed for students with 3 or 4 semesters of algebra and one year of geometry. Exercises are plentiful in this practically-oriented text. (1974)

Essentials of Mathematics, Skills and Concepts, 1973, Sobel, Maletsky, Hill. 7 - 12. *

This four-book sequence for the slow learner uses many illustrations, diagrams, and exercises to study topics in geometry, arithmetic and algebra. Most topics are new to the student, but two programmed chapters in each text offer a means of review of basic skills. Concrete examples lead students to discover new concepts such as mappings with a minimal amount of reading. The character Matt E. Matix appears throughout the series, as do the themes of flowcharts and computers. Laboratory experiences workbooks are used extensively with each text, offering varied and interesting activities, games and puzzles. Unfortunately, the covers are better suited for a kindergarten than a high school text. (1974)

Mathematics We Need Series, Brownell, Sauble, Marks, Smart, Purdy, Glennon, Weaver, Ruddell, Shortt. 7 - 8.

These are two basal texts.

Mathematics - A Structural Introduction, Fisher, Christison, Ellingson. 9. *

The ideas of sets and subsets of numbers are developed through irrational numbers. Chapter reviews and tests, cumulative reviews and puzzle pages are included.

Everyday General Mathematics, Betz, Miller, Miller, Mitchell, Taylor. 9 - 12. *

This is a two-book series.

GINN AND COMPANY

Mathematics Review Exercises, Fourth Edition, Smith, Fagen. 9 - 12.

This is a supplementary text.

Modern Review Mathematics, Buswell, Brownell, John. 9 - 12.

These are two paperbound volumes for remedial or review work.

Modern Algebra, A Logical Approach, Book One, Pearson, Allen. 9. *

This first-year course stresses inductive reasoning, proof, structure of algebra, logic, and the real-number field properties.

Algebra, Book One, Elementary Course, Modern Edition, Welchons, Krickenberger, Pearson. 9. *

This is a revision of an earlier edition.

First Course in Algebra, Revised Edition, Weeks, Adkins. 9. *

This expository text stresses structure, problem-solving and algebraic skills. An arithmetic review is included. Most of the explanations are quite short, but many problems are included. Graphing, sets, relations and functions are discussed and used very little. In addition to the usual topics, formulas and right triangle trigonometry are included. This text is suitable for average and below-average students. (1974)

Modern Algebra, A Logical Approach, Including Trigonometry, Book Two, Pearson, Allen. 11. *

This text provides a basic treatment of deductive reasoning, proof and algebraic structure along with a thorough coverage of functions. The book is quite difficult to read. (1974)

Algebra, Book Two, Modern Edition, Welchons, Krickenberger, Pearson. 11. *

Topics include functions, graphing of functions and quadratic inequalities. Structure is stressed; the language and concepts of sets are used.

Second Course in Algebra - with Trigonometry, Weeks, Adkins. 11. *

The first 7 chapters review first-year algebra; functions are introduced in chapter 9 and used thereafter. The approach is expository; many exercises and problems are included. Topics include logarithms, conic sections, polynomials, sequences, series, complex numbers, coordinate geometry and analytic trigonometry. This text is suitable for average students. (1974)

Plane Geometry, Welchons, Krickenberger, Pearson. 10. *

Three levels of work help students to understand the nature of deductive proof, discover proofs and practice deductive reasoning.

GINN AND COMPANY

A Course in Geometry, Plane and Solid, Weeks, Adkins. 10. *

This basal text stresses the structural aspects of geometry. Some concepts of coordinate geometry and trigonometry are included. Most exercises are proofs; there is some review of algebra, but not many algebra exercises. Constructions are studied early in the text. Plane and solid geometry are treated simultaneously. There is no transformational geometry included. (1974)

High School Geometry, Keniston, Tully. 10. *

This text uses a gradual approach to formal proof with many photographs and diagrams. The concepts of coordinate and solid geometry are included.

Transformational Geometry, 1973, Brown. 10 - 12. *

This supplementary booklet stresses isometries and mappings. Transformation groups and symmetry concepts are developed. Exercises and applications on a concrete level are included, as well as proofs. (1974)

Modern Trigonometry, Welchons, Krickenberger, Pearson. 11 - 12. *

The analytic aspects of trigonometry, vectors, and functional properties are stressed.

Trigonometry with Tables, Welchons, Krickenberger. 11 - 12. *

This is a supplementary text.

Modern Advanced Mathematics, Weeks, Adkins, Lynch. 12.

This text uses an expository, structured, axiomatic approach and introduces many concepts used in higher mathematics. Few proofs are required of the student, but many are given in the text. Many exercises are included. A varied selection of topics is possible, with subjects ranging through algebraic systems such as groups and fields, coordinate geometry, functions (conic, polynomial, and circular), mathematical induction, completeness, random variables and probability. (1974)

A First Course in Calculus, Including Analytic Geometry, 1974, Lynch. 12. *

Topics include functions, derivatives and their applications, integration, and concepts of limits and continuity. The text covers the AB advanced placement syllabus.

Calculus: A First Course, Lynch, Ostberg. 12. *

This is a review of pre-calculus and an introduction to calculus for accelerated students. It covers the BC advanced placement syllabus.

The Mathematics of Matrices: A First Book of Matrix Theory and Linear Algebra, Davis. 12.

The basic aspects of matrix theory--notation and terminology, formal algebra, interpretations and application--are included. Problems are of graded difficulty.

GINN AND COMPANY

Modern Programming: FORTRAN IV, Mullish. 12.

This supplementary text presents computer programming, assuming no previous background.

Readings in Mathematics, Adler. 7 - 12.

These two paperbacks of supplementary readings expose students to the original works of mathematicians, the development of applications and extended discussions of number systems.

Mathematics Tables for the High School. 9 - 12.

This 78-page paperback provides tables of squares, logarithms, trigonometric functions, degrees and radians, exponential and logarithmic functions.

GLENCOE PRESS
8701 Wilshire Boulevard
Beverly Hills, California 90211

Secondary

Computational Arithmetic, 1972, Pappin. 10 - 12.

This programmed text provides a refresher in arithmetic. An unusual amount of attention is given to mathematical precision. Topics are unusual for a text of this type.

GLOBE BOOK COMPANY
Department E18
175 Fifth Avenue
New York, New York 10010

Secondary

Exploring Algebra: Insights and Skills, Schor, Meng. 9 - 10. *

These three texts are available in hard or soft-cover for students who need extra help with algebra.

GRAYLOCK PRESS
428 East Preston Street
Baltimore, Maryland 21202

Secondary

Famous Problems of Mathematics, 1965, Tietze.

This is a good source for high school math projects. (MAT)

HAFNER PUBLISHING COMPANY
31 East Tenth Street
New York, New York 10003

Secondary

Games, Gods, and Gambling, 1962, David.

The origins and history of probability and statistical ideas from the earliest times to the Newtonian era are presented. (MAT)

HARCOURT BRACE JOVANOVICH, INC.
School Department
757 Third Avenue
New York, New York 10017

Elementary

Elementary Mathematics Series, Second Edition, 1968, Payne, Wells, Spooner, May. K - 8. *

These workbooks incorporate the fundamentals of arithmetic. Intuitive participation introduces the concepts of algebra and geometry. Problem-solving, extra practice sets and inquiry exercises are included. (1974)

Harbrace Mathematics, 1972, Payne, Beatty, Dominy, May, Spooner, Wells. K - 8.

Concepts are introduced informally through activities and games in this series. Guided discovery is used, stressing mastery of fundamental skills and problem-solving.

Harbrace Mathematics Instructional Slides. K - 6. *

A non-graded approach emphasizes content and concepts. The slides may be projected in daylight onto the blackboard. Five cartridges include addition, subtraction, multiplication and division of whole numbers, geometry, measurement, graphing, rational numbers and problem-solving.

Sequential Mathematics, 1973, Allegra.

This diagnostic-prescriptive program is for special education students with perceptual difficulties and poor reading and writing skills. It is designed to isolate and minimize causes of computation error. Two volumes cover addition, subtraction, multiplication and division of whole numbers.

Individualized Mathematics Skill Builder, 1970, Schultz. 2 - 8.

This product consists of cassette-recorded paced drills for individual speeds. The units include 3 sessions of 14-20 minutes. It may also be purchased as three LP albums.

Improving Your Ability in Mathematics, 1972, Eberhart, Payne. 3 - 8.

These four supplementary programs for individualized, self-directed instruction use a test-teach-test approach.

HARCOURT BRACE JOVANOVICH, INC.

Supercube, May. 3 - 8.

This self-contained cube contains 80 activities exploring basic concepts in geometry, topology, computers, probability and other areas of mathematics.

Exploring Sets, Geometry and Numeration Series, 1969, Spooner. 3 - 9.

This is a supplementary enrichment program.

Learning to Compute: Third Edition, 1973, Jones. 5 - 12. *

These two volumes in workbook form provide diagnostic and remedial work on basic arithmetic skills. Word problems and a progress flow chart are included.

Secondary

Harbrace Mathematics: Introduction to Secondary Mathematics 1 and 2, 1972, Payne, Spooner, Wells. 7 - 8. *

These texts for average and above-average students include traditional topics as well as many topics and applications not usually found in the middle school text. Concepts are carefully developed; self-checks are included where it is appropriate. Behavioral objectives are included in the teacher's text. (1974)

Key Ideas in Mathematics I and II, 1971, Gerardi, Foster, Jones. 7 - 8. *

This text includes guided discussion questions with a minimal amount of reading. An arithmetic review is provided for students who have had difficulty. 130 daily lessons are given.

Essential Skills in Algebra, Herrick, Hanzl-Hendrick, Adams. 8.

This book introduces the skills necessary for algebra on an informal, intuitive basis. It is designed for the second semester of eighth grade, according to the publisher.

Mathematics 1 and 2: Discover and Practice. 9 - 12.

This is a fundamental course for the non-academic high school student. A minimal amount of reading is needed. The emphasis is on arithmetic operations, but the basic elements of geometry and algebra, logarithms and trigonometry are included.

Numbers and Operations, 1970, Lankford, Heikkinen, Silvey. 9 - 12. *

This text for students in general mathematics courses presents a variety of methods for addition, subtraction, multiplication and division, word problems, and problems in geometry and measurement.

Essential Mathematics: Second Edition, 1967, Lankford, Ulrich. 9 - 12. *

This text is designed for general mathematics courses in which operations with whole numbers, fractions, decimals and percent are stressed. It also includes consumer economics, geometry, algebra and numerical trigonometry.

HARCOURT BRACE JOVANOVICH, INC.

Consumer Mathematics, 1971, Lankford, Goe. 9 - 12. *

This text helps the student to become aware of consumer problems and to develop the ability to analyze and solve these problems.

Introductory Algebra 1 and 2: Second Edition, 1973, Jacobs. 9 - 12. *

This is a two-year program for students who cannot manage first-year algebra in one year. Topics are presented at a slow pace with a review of arithmetic skills. Guided discovery is used.

Algebra One, Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni. 9. *

This text introduces proof and the structure of the real number system. Geometric models are used to clarify algebraic concepts. Relations, functions and problem-solving are included.

Algebra 500. 9 - 10. *

Eight cartridges of slides clarify algebraic concepts, operations and problem-solving. Slides may be projected on the blackboard in daylight. Topics include sets and numbers, solving equations, inequalities, problem solving, graphing relations, systems of sentences, exponents and radicals, polynomials and factoring, quadratics, trigonometry, functions, logic and proof. The slides are well-done and easy to use. (1974)

Discovering Geometry, 1972, Jacobs, Meyer. 10 - 12.

This text covers a complete range of topics found in traditional texts but is written for non-math-oriented, college-bound students. Language is clear; proofs are partially done. Algebra review exercises are included at intervals, and a transformational approach is used in developing congruence and similarity.

Geometry, Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni. 10. *

Proof is developed, and logic is used. Transformational geometry, coordinate geometry, relations and functions are included.

Geometry 500. 10. *

This product includes eight cartridges of slides to be projected on the blackboard in daylight. Topics are basic assumptions, induction and deduction, logic and proof, congruent triangles, parallels and coordinates, parallelograms, inequalities, circles and spheres, similar polygons, area, volume, the Pythagorean theorem and trigonometry.

Algebra Two with Trigonometry, Second Edition, 1972, Payne, Lankford, Ulrich, Zamboni. 11. *

This programmed review of Algebra One is followed by an introduction to proof and the complex number system, which is stressed throughout the text. Coordinate geometry in two and three dimensions, trigonometry, matrices, probability, mathematical induction and linear programming are included.

HARCOURT BRACE JOVANOVICH, INC.

Algebra and Trigonometry, 1972, Davis. 12.

The work of intermediate algebra and trigonometry is emphasized through proof and general theory in this text for the better student. The text is somewhat lacking in practice exercises. The text, programmed volumes, or both may be used. (1974)

Advanced Mathematics: A Preparation for Calculus, 1972, Payne, Lankford, Ulrich, Zamboni. 12. *

This text provides a preparation for college math. It discusses functions of real numbers (trigonometric, circular, exponential, logarithmic and polynomial), analytic geometry, vectors, matrices, the limit concept, and introductory calculus. The first four chapters are available as a paperback Trigonometric and Circular Functions.

HARPER AND ROW PUBLISHERS
East Brunswick, New Jersey 08816

Elementary

New Dimensions in Mathematics. K - 6. *

Reading is at a minimum in this review of basic facts. Concepts are developed through multiple methods incorporating a spiral approach. Drill insures computational speed and accuracy. Dual-track problems are included, and story problems are emphasized.

Secondary

Mathematics Modules. 7 - 8.

These twenty-four paperbacks or two hardbacks may be used for two sequenced courses or as supplements. Course I includes sets, relations and functions, whole numbers, number theory, geometry, fractions, decimals, ratio, proportion, percent and math systems. Course II includes geometry, introductory algebra, statistics, probability and logic. (1974)

Fundamental Mathematics for Technical Students, 1972, Davis. 10 - 12.

This text designed for vocational students covers real number arithmetic, elementary algebra, graphs, geometry and numerical trigonometry. Rote procedure is used throughout the text. Some background in algebra and geometry is desirable.

UICSM, 1963-1967, 7 - 8. *

See the review section.

HAYDEN BOOK COMPANY, INC.
116 West 14th Street
New York, New York 10011

Secondary

Basic BASIC: An Introduction to Computer Programming in BASIC Language, Coan. 11 - 12. *

This text is for precalculus students. New topics begin with a short program and progress to sophisticated problems. Flowcharts are used throughout.

Discovering BASIC: A Problem Solving Approach, Smith. 10 - 12.

Brief lessons are followed by reviews. Programming begins almost immediately. This text is good as a supplement. (1974)

Beginning FORTRAN, Maniotes, Higley, Haag. 10 - 12. *

This text requires a knowledge of first-year algebra. Programming is introduced through GOTRAN, a subset of FORTRAN.

Comprehensive Standard FORTRAN Programming, Haag.

This book uses sample problems from a variety of fields.

Comprehensive FORTRAN Programming, Haag.

After introducing a small amount of FORTRAN II, this text requires the reader to write a complete program. The language of an IBM 1620 compiler with an attached 1311 disk drive is used.

D. C. HEATH AND COMPANY
125 Spring Street
Lexington, Massachusetts 02173

Elementary

Edge Two, 1971. K - 1. *

This book uses a systems approach to teaching basic mathematics skills and ecological concepts. Filmstrips, games and printed materials help students to learn the concepts of shape and size. Grouping like objects in a set, reading numerals, adding and subtracting numerals with two digits, are included as objectives.

Heath Elementary Mathematics, 1972, Dilley, Rucker, Jackson. K - 6. *

Models, games, problem-solving and projects lead students to discovery. Reading is minimized. Behavioral objectives are included.

New Ways in Numbers, A Modern Mathematics Program, Second Edition, 1969, Hatzo, Horrigan, Smith. 1 - 8. *

This series of paperback text-workbooks uses a discovery method and applications. Topics include sets, inequalities and equations, properties of operations, numeration systems, coordinate geometry, modular systems and statistics.

D. C. HEATH AND COMPANY

Practice in Mathematics, A Series of Duplicating Masters, 1969, Smith. K - 8. *

These nine books of 48 masters each supplement any math program. Extensive practice and diagnosis of individual weaknesses is provided.

Math Games, 1970. 2 - 8. *

This product provides for the active use of arithmetic in games with playing cards (whole number arithmetic), dominos (factors and multiples), and spinners (fractions).

Programmed Modern Arithmetic, 1965, Fitzgerald, Starr. 4 - 6. *

These four auto-instructional booklets are for use as supplementary material. Topics include logic, sets, set relations and set operations

Secondary

Heath Mathematics Levels 7 - 8, 1973, Rising, Smith. 7 - 8. *

The emphasis here is on active involvement and motivation through the use of puzzles, projects and games. A review of basic arithmetic, equations, positive and negative numbers, motion geometry, probability, statistics, sampling, computers, flowcharts, an African numeration system and number theory are studied.

Mathematics: Modern Concepts and Skills, Dilley, Rucker. 7 - 9. *

This book uses a simpler vocabulary for slow learners. Basic computational skills and fundamental concepts of geometry and measurement are included.

Mathematics in Daily Use, 1966, Hart, Schult, Irvin. 9 - 10. *

This terminal text in basic mathematics stresses concepts, principles and arithmetic processes.

High School Mathematics Series, Courses 1 - 4, 1970, Beberman, Vaughan. 9 - 12. *

These four courses are based on UICSM principles. The discovery of principles, applications to problem situations, and the precise use of language and symbolism are stressed.

Algebra 1: A Modern Course, 1970, Beberman, Wolfe, Zwoyer. 9. *

The explanations in this text are designed for students of average ability. Foreshadowing techniques and situational involvement are used. A central theme is the properties of the real number system. The text begins with the real numbers and then examines integers and rationals.

Geometry: A Modern Course, 1971, Beberman, Dennis, Wolfe, Zwoyer. 10. *

Exploration exercises followed by explanation develop the fundamental properties of plane and solid Euclidean geometry, isometries and basic ideas about symmetry. The text is for average students who have had a basic course in algebra.

D. C. HEATH AND COMPANY

Algebra 2 with Trigonometry: A Modern Course, 1970, Beberman, Wolfe, Zwoyer. 10 - 11. *

This text reviews first-year algebra and presents the properties of number systems. A spiral approach is used for average students.

Trigonometry for Secondary Schools, Third Edition, 1967, Butler, Wren. 12.

The structural and analytic aspects of trigonometry are emphasized. Inverse functions and their graphs, the wrapping function, and complex numbers and vectors are discussed.

Neuva Trigonometria Plana Y Esferica, 1917, Wells. 12.

This is a standard treatment in Spanish of plane and spherical geometry.

Elementary Functions: Pre-Calculus Mathematics, 1973, Wright, Lindgren. 12.

Sequences, series, permutations, combinations, probability and trigonometry are developed to prepare students for calculus.

Elementary Mathematical Analysis, Second Edition, 1967, Herberg, Bristol.

The concept of function is the underlying theme in this text for accelerated students. Analytic trigonometry, limits, continuity, derivatives and antiderivatives are discussed.

An Introduction to Sets, Probability, and Hypothesis Testing, 1964, Fehr, Bunt, Grossman. 12. *

This is a one-semester course in probability theory and its application to hypothesis testing.

Thinking with Mathematics Series - 9 - 12. This supplementary enrichment series includes:

Mathematics Project Handbook.

The Concept of a Function.

Graphing Relations and Functions.

An Introduction to Linear Programming.

The Natural Numbers.

The Integers.

The Real Numbers. Limits and sequences are discussed.

The Complex Numbers.

The Rational Numbers. Equivalence classes are introduced.

Finite Mathematical Structures. Fields and groups are studied.

An Introduction to Transfinite Mathematics.

Congruence and Motion in Geometry.

Geometry Revisited.

First Concepts of Topology.

HOFFMAN INSTRUCTIONAL SYSTEMS
4323 Arden Drive
El Monte, California 91734

Elementary

Hoffman Audio-visual Math Program. K - 2. *

This program includes 150 study units using slides, records and workbooks. Topics include sets, number/numeral development, operations, measurement, geometry, logical thought, and problem-solving. The program is to be expanded through grade 6.

HOLDEN-DAY
500 Sansome Street
San Francisco, California 94111

Elementary

Geometry for Primary Grades, Books I and II, Hawley, Suppes. 1 - 5. *

This book encourages mathematical thinking and sharpens the ability to reason. Vocabulary and reading comprehension are "improved."

Geometry, Fun with Fundamentals, Books 1 - 4, Gearhart, Hawley, Suppes. 4 - 9. *

The first two books concentrate on understanding and awareness of basic concepts; the last two offer a sequential introduction to more complex problems. An inquiry-discovery approach incorporates review material in each lesson.

Secondary

Computer Programming in BASIC, 1971, Pavlovich, Tahan. 10 - 12.

This text uses a problem-solving approach to programming.

Computer-oriented Mathematics: An Introduction to Numerical Methods, 1964, Kovach. 11 - 12.

Many examples stress numerical analysis without a computer as well as with one. Interpolation, approximation, iteration, and Monte Carlo methods are studied.

Elementary Analysis, McCoart, Oliphant, Scheerer. 12.

A logical approach to calculus stresses accurate mathematical reasoning. Topics include properties of the real numbers, functions, limits and continuity, derivatives, integrals, logarithmic and exponential functions.

Elementary Calculus, Headley. 12.

Applications in specialized fields are avoided. Developing an intuitive feel for calculus is stressed. Not many proofs are included.

Numbers and Ideals, Robinson. 12.

This is an introduction to the basic notions of algebra and number theory, such as rings, fields and ideals, all grouped around the theory of algebraic integers in quadratic number fields.

Challenging Mathematical Problems with Elementary Solutions, Yaglom, Yaglom. 10 - 12.

These two volumes of problems deal with combinatorial analysis and other branches of mathematics, such as geometry, topology, number theory, etc. They provide good material for math clubs, but most problems are quite difficult. (1974)

HOLT, RINEHART AND WINSTON
383 Madison Avenue
New York, New York 10017

Elementary

Developing Pre-Number Ideas, 1965, Lucas, Neufeld. K. *

This text-workbook provides experiences contributing to a basic understanding of the whole numbers 1 - 9 by giving children opportunities to manipulate, classify and arrange in order objects and sets of objects.

Happy Ways to Numbers, 1967, Ambrose. K - 1. *

Concrete experiences develop concepts and skills relating to the whole numbers 0 to 9. Equivalence sets, writing numerals, ordering numbers, the joining and partitioning of sets are presented through workbook activities.

Developing Number Experiences Kit A, 1966, Lucas, Neufeld. K - 2. *

Manipulative materials and game cards provide experiences in classifying, structuring and ordering sets of objects.

Exploring Elementary Mathematics, 1970, Keedy, Dwight, Nelson, Schluep, Anderson. K - 6. *

The structure of number systems and the basic properties of numbers are stressed in this program for average students. Basic arithmetic facts and proficiency in computation and problem-solving skills are emphasized in an exploratory approach using concrete manipulative materials. Supplementary materials are available. (1974)

Elementary Mathematics: Patterns and Structure, 1968, Nichols, Flournoy, Kalin, Simon. 1 - 8. *

The essentials of pre-high school math are provided with an emphasis on structure and patterns in arithmetic and the development of basic geometry topics. The development of new ideas and review of old ones begin with concrete examples. The series may be easily supplemented with lab activities. Eight books are included for accelerated students; the last four books are incorporated in a 3-book sequence. Transparencies and filmstrips are available. (1974)

HOLT, RINEHART AND WINSTON

Moving Ahead in Arithmetic, Books One and Two, 1963, Merton, Brueckner. 1 - 2. *

This series includes test-workbooks and supplementary experiences.

Individualized Study Units in Arithmetic, 1970, Simon. 3 - 12.

These eight units cover operations with whole numbers, fractions, decimals, and percentage problems.

Good Time Mathematics, 1972. 4 - 6. *

This multimedia activity program includes event cards, posters, books, filmstrips and films organized in five strands: numbers and operations, geometry, measurement, statistics and probability, functions and graphs. The approach of the non-graded program is based on experiment, inquiry and discovery.

Secondary

Exploring Modern Mathematics, Books One and Two, 1971, Keedy, Smith, Johnson, Jameson. 7 - 8. *

These texts use an exploratory approach and a minimum of terminology to review basic arithmetic algorithms, and introduce metric and non-metric geometry, flowcharts and equation-solving. (1974)

Investigating Mathematical Ideas, 1969, Wohlfort, Sheridan. 7 - 8. *

These four consumable skillbooks for average and low-average students use a discovery approach, according to the publisher.

Pre-Algebra Mathematics, 1970, Nichols. 7 - 12. *

The development and maintenance of computational skills and math concepts in solving problems are stressed through a discovery approach. Topics include arithmetic skills, algebra, geometry, introductory coordinate geometry and probability. (1974)

Trouble-Shooting Mathematics Skills, Revised 1969, Bernstein, Wells. 7 - 12. *

This remedial program places great emphasis on techniques of problem-solving, mental arithmetic and estimating reasonable answers. It is designed to bridge the gap between a modern and a traditional treatment of fundamental skills.

Consumer-Related Mathematics: A Business Approach, 1971, Kravitz, Brant. 9 - 12. *

Modern math is used to develop basic arithmetic concepts and skills for students planning to enter the business world after graduation. A narrative style and cartoons are used. Supplementary materials are available.

HOLT, RINEHART AND WINSTON

Foundations of Mathematics, Revised 1968, Wiebe. 9 - 12. *

Problem-solving is approached through the concepts of sets, number lines, and numeration systems in other bases. Average or below-average students may use this text to "bridge the gap" between the study of arithmetic and algebra. A workbook is available. (1974)

Explorations in Mathematics, 1970, Wiebe, Goodfellow. 9 - 12. *

Experiments and illustrations lead general math students to discover the need for mathematics in the world. Basic operations are examined through flowcharts. Topics include informal geometry, arithmetic operations, graphs, probability, statistics, number theory and a short introduction to trigonometry. The text is interesting and provides a lot of motivational material. Many computation exercises are included in the appendix. A concrete manipulative approach is used. (1974)

Problem Solving Mathematics, 1972, Kinney, Ruble, Brown. 9 - 12. *

Vocational, personal and community experiences help the students to develop essential math skills. Systematic procedures for solving problems, accurate computation and the language of mathematics are learned.

General Mathematics, A Problem-Solving Approach, Books One and Two. 1967, Kinney, Ruble, Brown. 9 - 12. *

Modern Elementary Algebra, Third Edition, 1969, Nichols. 9 - 10. *

An intuitive approach to solving equations and inequalities leads students to discover the structure of the real number system.

Holt Algebra 1, 1974.

Modern Intermediate Algebra, Revised 1969, Nichols, Heimer, Garland. 10 - 12. *

The theme is the concept of a function. Coordinate geometry, trigonometry, logarithmic and exponential equations, permutations, combinations, probability and vectors are included with the usual topics of second-year algebra.

Algebra and Trigonometry, 1967, Keedy, Griswold, Schacht, Hamary. 10 - 12. *

This text uses an integrated approach to algebra and trigonometry treating polynomial, circular, exponential and logarithmic functions.

A Program in Contemporary Algebra, Revised 1970, Heimer, Kocher, Lottes. 9 - 12. *

These five programmed booklets are for an accelerated or remedial course.

Holt Algebra 2 with Trigonometry, 1974.

Modern Geometry, 1968, Nichols, Palmer, Schacht. 10 - 12. *

Set language and algebraic properties applied to geometric situations are stressed. Plane, solid and coordinate geometry are integrated.

HOLT, RINEHART AND WINSTON

Holt Geometry, 1974.

Modern Trigonometry, 1968, Nichols, Garland. 11 - 12. *

Plane trigonometry as based on the wrapping function is introduced. The analytic aspects of trigonometry follow an introductory review of basic mathematical concepts.

Analytic Geometry, 1973, Nichols, Kalin. 12.

Vectors are emphasized. Linear combination, linear dependence and independence, dimension and basis concepts serve as an introduction to linear algebra.

Calculus - Analytic Geometry - Elementary Functions, 1973, Shanks, Cambill. 12. *

This combined analytic geometry-calculus course covers analytic geometry, vectors, and algebraic, trigonometric and exponential functions. The calculus is problem-oriented, according to the publisher.

Introductory Calculus, 1972, Horner. 12.

In this book designed for a two-semester course, heavy emphasis is placed on the student's reading and understanding the text. Many carefully graded exercises are included to reinforce the textual material.

Introductory Calculus with Analytic Geometry, 1954, Begle. 12.

This text covers topics usually treated in a first course in calculus; it includes analytic geometry through the conics. (MAT)

Fundamentals of College Mathematics, 1961, Brixey, Andree. 12.

This text integrates introductory calculus and statistical inference with algebra, trigonometry and analytic geometry. (MAT)

Selections from Modern Abstract Algebra, Second Edition, 1971, Andree. 12.

This college-level book includes congruences (modular algebra), Boolean algebra, groups, fields, and matrices. It may be used with advanced high school students. (MAT)

Introduction to Sets, 1962, Nichols, Kalin, Garland. 7 - 12. *

This is a programmed booklet.

Arithmetic of Directed Numbers, 1962, Nichols, Kalin, Garland. 7 - 12. *

This is a programmed review of basic arithmetic operations.

Introduction to Coordinate Geometry, 1963, Nichols, Kalin, Garland. 7 - 12. *

This is a programmed booklet.

Introduction to Exponents, 1964, Odom, Nichols. 7 - 12. *

This is a programmed booklet.

HOLT, RINEHART, AND WINSTON

Introduction to Functions: Relations, Functions and Graphs, 1967, Brant, Keedy. 9 - 12.

Functions involving absolute values, inequalities, conjunctions and disjunctions are studied.

Introduction to Functions: Operations and Properties, 1969, Brant, Keedy. 9 - 12.

Addition, subtraction, multiplication, division and composition of functions are presented.

Elementary Logic for Secondary Schools, 1962, Brant, Keedy. 9 - 12.

The Slide Rule: A Complete Manual, 1967, Slater. 9 - 12.

Liberde Ludo Aleae (The Book on Games of Chance), 1961, Cardano. 10 - 12.

This is a 450-year-old discourse. (MAT)

An Introduction to the History of Mathematics, 1969, Eves. 10 - 12.

Accompanying problem sets make this book more than just a history. (MAT)

An Introduction to the Foundations and Fundamental Concepts of Mathematics, 1965, Eves, Newsom. 11 - 12. (MAT)

Sets, Relations and Functions, 1962, Gray. 11 - 12.

Set theory is discussed. (MAT)

Introduction to Mathematical Analysis, 1962, Johnson, McCoy, O'Neill. 12. (MAT)

Transparencies, films, games, filmstrips and manipulative devices are also available.

HOUGHTON MIFFLIN COMPANY
53 West 43rd Street
New York, New York 10036

Elementary

Structural Arithmetic, Stern, Stern, Gould. K - 3. *

Through experiences with manipulative devices, pupils visualize abstract number concepts in concrete terms, discover number relationships and work out general principles.

HOUGHTON MIFFLIN COMPANY

Modern School Mathematics: Structure and Use, Duncan, Capps, Dolciani, Quast, Zweng. K - 6. *

Discovery and individual learning patterns are stressed in developing concepts from the concrete to the abstract. Drill reinforces concepts and develops skills. The illustrations and exercises in the texts for kindergarten through second grade are especially attractive. A variety of supplemental materials is available, including tapes, visual aids, workbooks, geoboards and film loops. (1974)

Mathematics for Individual Achievement, Denholm, Hankins, Herrick, Vojtks. K - 6. *

This alternate instructional program concentrates on a core of basic skills for the middle-range pupil. Students are actively involved in mathematics.

I. C. S. P. - Individualized Computational Skills Program, Shaw, Hiehle. 1 - 9.

This supplementary program for students weak in computational skills provides a sequential skills outline, arithmetic skills inventories, record forms, drill and practice sheets, teaching models, and computation tests in 12 skill areas. It is also available in a computer-assisted instruction version.

Mathematics in the Making, Bell, Long, Hides, Campbell. 3 - 8.

This set of 12 paperbacks emphasizes imaginative thinking and manipulation of objects. Answers are provided, and reading level is controlled. Work may be independent, small-group or with the entire class. Topics include area and perimeter, number systems, solids, rotation and angles, curves, scale-drawing, transformations and symmetry, networks, sets and relations, graphs, and statistics.

What is a Computer?, Ball. 4 - 9.

This introduction to computers includes the development of computers, their operation and the fundamentals of flowcharting.

Individualized Instruction in Mathematics: Activity Cards, Wagner, Cole, Scrivens, Herrick. 4 - 12. *

These 80 cards, each with a duplicate, emphasize the basal mathematics operations.

Individual Pupil Monitoring System, IPMS.

This is a system of criterion-referenced testing materials.

Customized Objective Monitoring Service.

These criterion-referenced tests are constructed for locally-assessed development needs.

Secondary

Modern School Mathematics: Structure and Use, Books 7 and 8, 1972, Duncan, Cole, Scrivens, Sparks. 7 - 8. *

This is an extension of the K-6 series. Discovery techniques are used throughout. Applications are current and appropriate. Topics from elementary school are reviewed and extended. (1974)

Modern School Mathematics: Structure and Method, 1972, Dolciani, Wooton, Beckenbach, Chinn, Markert. 7 - 8. *

The structure of the rational number system is stressed with considerable use of number lines to explain concepts. The approach is straightforward, and examples are clear. Chapters on number theory, sets, intuitive geometry, measurement, and graphing are included. There does not seem to be enough computation practice; fractions and decimals are not considered until late in the first course. (1974)

Modern School Mathematics: Pre-Algebra, 1973, Dolciani, Wooton, Beckenbach, Feldman, Chinn, Markert. 7 - 9. *

This text is very similar to MSM: Structure and Method, by the same authors; the section on sets, for example, is identical in both books. The chapter on place-value systems and operations in other bases is good, and the chapter on number theory is extensive if somewhat lacking in the intuitive development of such concepts as LCM and GCF. The number line is used extensively, and the structure of a number system is stressed. Fractions and decimals are introduced late in the book, and more computation practice is needed for most students. Chapters on the metric system, irrational numbers, equations, and graphing are included. (1974)

Modern Basic Mathematics, 1972, Hyman, Sokol, Speckelmeyer. 9 - 12. *

This review of arithmetic and basic geometry for non-academic students emphasizes problem-solving and computation with rational numbers. Objectives are given for each chapter but are sometimes vague. The approach is straightforward and clear. Additional motivational material and activities are needed. Negative numbers are introduced late in the text, but the explanation (using addend arrangement) is quite good. Self-tests are provided for the student. Material on statistics and probability is also included. (1974)

Modern Applied Mathematics, 1971, Gold, Garlberg. 9 - 12. *

A minimum amount of reading is needed in this text for vocational students. Topics include arithmetic review, measurement, geometry, constructions, use of formulas in right-triangle trigonometry, ratio and proportion, percent and graphing.

Patterns in Mathematics, 1970, Edmonds, Graham, Linn. 7 - 12. *

A minimal amount of reading is required in this text designed to stimulate students of limited interest or ability. Topics include sequences, directed numbers, percent, scientific notation, linear equations, systems, graphs, ratio and proportion, area, the Pythagorean theorem and trigonometry of the right triangle. (1974)

HOUGHTON MIFFLIN COMPANY

General Mathematics for the Shop, Nelson, Moore, Hamburger. 9 - 12. *

The fundamentals of arithmetic, algebra and geometry are explained and applied through a variety of shop activities.

Modern Mathematics for Achievement, First and Second Courses, 1972, Herrick, Zartman, Conrow. 7 - 12. *

Eight paperbacks for each course emphasize practical concepts and skills for low achievers.

Elementary Algebra, Parts 1 and 2, Denholm, Dolciani, Cunningham. 8 - 10. *

This two-text series furnishes the basis for an elementary algebra course offered as a two-year sequence. An arithmetic review and the usual topics of algebra are included. The language is simple, yet precise. Examples are explained well. Some trigonometry and geometry is included. (1974)

Modern School Mathematics: Algebra I, 1970, Dolciani, Wooton, Beckenbach, Jurgenson, Donnelly. 8 - 10. *

See the review section.

Individualized Instruction Program for Modern School Mathematics: Algebra I and Algebra and Trigonometry 2, 1970, Smith.

This source book is to be used with the regular text. Behavioral objectives are given by levels for major concepts and skills.

Modern School Mathematics: Algebra and Trigonometry 2, 1971, Dolciani, Wooton, Beckenbach, Sharron. 10 - 12. *

See the review section.

Modern Algebra: Structure and Method, Book 1, Revised Edition, 1973, Dolciani, Wooton. 8 - 12. *

This basal text for first-year algebra emphasizes sets, the principles of real number systems, techniques of algebra and deductive reasoning. Supplementary materials are available.

Individualized Instruction Program for Modern Algebra, Structure and Method, Books 1 and 2, Revised Edition, Smith.

Behavioral objectives are listed by levels for major concepts and skills. This booklet is designed to be used with the regular text and cannot be used alone.

Individualized Course, Modern Algebra, Structure and Method, Book 1, Revised Edition, Dolciani, Wooton, Gierl, Guldberg, Reinke, Whitehouse. 8 - 10. *

This text allows individualized instruction for a single student, small groups or a complete class and may be used concurrently with the basal text or alone. Behavioral objectives, pre-tests and post-tests are included. Flowcharts guide movement from one lesson to the next. Visuals are available. This text provides a good beginning for a program seeking to individualize instruction. (1974)

HOUGHTON MIFFLIN COMPANY

Modern Algebra and Trigonometry: Structure and Method, Book 2, 1973, Sorgenfrey, Wooton, Dolciani. 11 - 12. *

This text is less demanding with respect to proofs and reading requirements. A basic trigonometry course, computer explorations and applications of mathematics to vocations are included. The structure of the real number system and functions are stressed. Although the explanation of factoring is somewhat sketchy, that of completing the square is much more complete. Ample exercises are included. (1974)

Modern Algebra and Trigonometry, Structure and Method, Book 2, Revised Edition, 1973, Dolciani, Berman, Wooton. 11 - 12. *

Structure and deductive proof are stressed in this text. A review of algebra, trigonometry, polynomial functions, complex numbers, matrices and probability are some of the topics included. Relations and functions are unifying concepts used throughout the text. (1974)

Programmed Units in Mathematics: Work, Mixture and Motion Problems. 9 - 12. *

These three programmed booklets teach the skills necessary for translating specific types of problems into algebra statements by examining in detail sample problems. (1974)

Modern Basic Geometry, 1973, Jurgensen, Maier, Donnelly. 9 - 12. *

Less reading matter is included in this text for average ability students. Proofs are guided; students are expected to complete the incomplete proofs. Algebra and arithmetic practice are included, and specific objectives are identified. Coordinate geometry is not considered until the last chapter; constructions are also placed near the end of the text. No transformational geometry is included. (1974)

Modern School Mathematics: Geometry, 1972, Jurgensen, Donnelly, Dolciani. 9 - 12. *

The 1969 edition is discussed in the review section.

Individualized Instruction Program for Modern School Mathematics: Geometry, Smith.

Behavioral objectives are listed in levels for major concepts and skills. This book is designed to accompany the basal text.

School Mathematics Geometry, 1973, Anderson, Garon, Gremillion. 9 - 12. *

Plane and solid geometry are unified in an amplified SMSG geometry text. Functions, vectors, mathematical models, coordinate geometry and some trigonometry are included.

Geometry: A Guided Inquiry, 1972, Chakerian, Crabill, Stein. 10 - 12. *

An inquiry approach to the usual first-year Euclidean geometry topics is used. The process encourages students to experiment with ideas, to talk with others and to carry out investigations on their own. Self-tests, algebra reviews and project suggestions are included.

HOUGHTON MIFFLIN COMPANY

Geometry: Plane - Solid - Coordinate, 1968, Morgan, Zartman. 9 - 12. *

Plane geometry is followed in each chapter by similar concepts in solid and coordinate geometry. Structure is stressed.

Modern Coordinate Geometry, A Weslayan Experimental Curriculum Study, 1969. 9 - 12. *

Algebra and geometry are integrated in this text for honors students. Exploratory exercises encourage student investigation of concepts before formal introduction. Affine functions, convex sets, perpendicular projection, transformation, reflection, linear programming and some trigonometry are included. Proofs are in paragraph form. This text is mathematically rigorous and is probably too abstract and too difficult for some students. (1974)

Modern Trigonometry, 1973, Wooton, Beckenbach, Buchanan, Dolciani. 11 - 12. *

Trigonometric and circular functions are explicitly related. The discussion of vectors, complex numbers, matrices, infinite series and other topics is suitable for a wide range of students. (1974)

Modern Analytic Geometry, 1972, Wooton, Beckenbach, Fleming. 11 - 12.

This one-or two-semester course with emphasis on vector methods includes topics such as determinants and vectors in space, constructible angles, affine transformations, and topology. The plane and Euclidean 3-space are considered separately. (1974)

Modern Introductory Analysis, 1970, Dolciani, Beckenbach, Jurgensen, Donnelly, Wooton. 11 - 12. *

This pre-calculus study of mathematics stresses the study of functions. Topics include sets, elementary logic, properties of the real number system, mathematical induction, vectors, analytic geometry, trigonometry, and introductory calculus. (1974 - MAT)

Analysis of Elementary Functions, 1970, Sorgenfrey, Beckenbach. 11 - 12. *

This one-semester course for students with two years of algebra and a year of geometry develops the algebra of functions. Polynomial, logarithmic, exponential and circular functions are included. The basic ideas of calculus are also used. (1974)

Limits: A Transition to Calculus, 1970, Buchanan. 11 - 12. *

The concept of limit prepares students for calculus. Topics include inequalities, upper and lower bounds, absolute value, and graphing.

Introductory Statistics and Probability: A Basis for Decision-Making, 1971, Blakeslee, Chinn. 11 - 12. *

This one-semester course for students who have had two years of algebra uses an intuitive approach to random variables, probability functions, binomial and normal distributions. (1974)

Flowcharting, 1970, McQuigg, Harness. 7 - 12.

Simple, familiar situations presented in flowchart form lead to more complex problems. (1974)

HOUGHTON MIFFLIN COMPANY

Introduction to Computer Programming, 1969, Crawford, Capp. 9 - 12.

This workbook for students who can work with positive and negative numbers does not require access to a computer. Flowcharts and how a program works are discussed. (1974)

A Guided Tour to Computer Programming in BASIC, 1973, Dwyer, Kaufman. 8 - 12.

The elementary statements and commands of BASIC are presented in an attractive format.

Contemporary School Mathematics Series, Matthews. 9 - 12.

These two series of paperbacks include such topics as sets and logic, matrices, computers, shape-size-place, probability, and statistics.

Houghton-Mifflin Mathematics Enrichment Series, Meder. 7 - 12.

Topics include the theory of numbers, Fibonacci and Lucas numbers, inversive geometry, legislative apportionment, sequences, induction, mosaics, stereograms, graphs, groups and games, four-dimensional geometry and a geometric approach to conics.

Experiments in Mathematics, Stages 1, 2 and 3, Pearcy, Lewis. 6 - 9.

A laboratory approach to learning mathematics is used.

INDEPENDENT SCHOOL PRESS
51 River Street
Wellesley Hills, Massachusetts 02181

Intermediate

Exercises in Pre-Algebra, Butler. 6 - 8.

Exercises, problems, and diagnostic tests are presented. Topics include numerals and numeration, sets, number theory, fractions, decimals, metric geometry, order of operations, evaluating expressions, ratio and proportion, percent, numerical trigonometry, real numbers, scientific notation, metric system, introductory algebra, probability and statistics.

Continuous Advancement Program (CAP), Reeby. 6 - 9. *

Each self-learning packet in this program includes objectives, self-tests, post-tests and answer keys. First-year topics are the Hindu-Arabic numeration system, sets and set notation, whole numbers, number theory, fractions and decimals. Second-year topics include ratio and proportion, percent, integers, number sentences and equations, graphing, measurement, geometry, precision and accuracy, and perimeter, area and volume.

INDEPENDENT SCHOOL PRESS

Secondary

Relevant Mathematics I, II and III, Stone, Becker. 8 - 12.

This secondary series combines modern and traditional topics. It is designed for above average students.

Algebra I - A Versatile Approach, Sargent, Gosse, Holz. 9. *

These nine separate packets contain self-instructional and self-testing material with a separate battery of post-tests. They may be used in traditional or individualized classrooms.

Exercises in Elementary Algebra, Lux, Pieters. 9 - 12.

This book includes oral and review exercises and examinations covering both modern and traditional topics. It may be used with any basic text, according to the author.

INSTITUTE OF LIFE INSURANCE
Educational Division
277 Park Avenue
New York, New York 10017

Secondary

Sets, Probability and Statistics, Clifford, Keiffer, Sobel. 9 - 12.

This pamphlet includes the study of sets, sample spaces, probability, statistics, mortality tables, compound interest, premium calculations, and uses of life insurance. Questions for class discussion, demonstrations, problems and experiments are included. An answer key is available. (1974)

S. I. JONES COMPANY
1032 Belvidere Drive
Nashville, Tennessee 37204

Secondary

Mathematical Clubs and Recreations, Jones. (MAT)

Mathematical Wrinkles, Jones. (MAT)

Mathematical Nuts, Jones. (MAT)

KEY CURRICULUM PROJECT
Box 2304, Station A
Berkeley, California 94702

Secondary

Key to Algebra, Integers: Booklets 1 - 4. 9 - 12.

These pamphlets provide practice in basic algebra skills. Each booklet except the first begins with a review.

KIEWIT COMPUTATION CENTER
Documentation Center
Dartmouth College
Hanover, New Hampshire 03755

Secondary

School BASIC, Weissman. 7 - 12.

This is a good introduction to programming in BASIC. Language is simple; exercises and examples are clear. (1974)

BASIC in Ten Minutes a Day, Hoitsma. 7 - 12.

This is a good introduction to the basics of programming, although extremely short. Simple, clear language is used. (1974)

Use of a Computer in a General Math Course, Waterhouse. 9 - 12.

The emphasis is on flowcharting in this book. Assignments and objectives are given for teacher use. Additional text and/or problems are needed. (1974)

Data Reduction Program for IPS, Congdon.

Orbital Mechanics, Dalton.

Solving n Equations in n Unknowns, Nevison

Suggestions for Programs, Danver. 7 - 12.

A wide variety of problems are given for students at all levels. (1974)

Computer Course for Business Students, Waterhouse.

Elementary Functions: An Algorithmic Approach, Higgins.

LAIDLAW BROTHERS
Thatcher and Madison
River Forest, Illinois 60305

Elementary

The Understanding Mathematics Program, Gundlach, Buffie, Denny, Kempf Nesbit, Pearson, Wallen. K - 8. *

This non-graded series emphasizes understanding and mastery of computational skills and the development of mathematical concepts. Inductive lessons, reinforcement and challenge activities are included. Geometry is introduced.

The Spectrum Mathematics Series, France, Clarke. 3 - 8.

This non-graded consumable program is designed for students who need help with the basic concepts and skills of computational reasoning. It includes diagnostic pre-tests, developmental exercises, applications, evaluations, progress charts and answers.

Exploring the Metric System, Kempf, Richard. 4 - 6.

This consumable text-workbook examines measures of length, perimeter and area, volume, capacity and weight.

Secondary

Using the Metric System, Kempf, Richard. 7 - 12.

This consumable text-workbook includes the study of temperature, angle measure, electric current, and light intensity.

Introduction to High School Mathematics, Brown, Snader, Simon. 9 - 12.

This text helps develop mathematical reasoning, principles and processes and provides a background for algebra. Topics include measurement, geometric construction, counting, whole and fractional numbers, decimals, percent, tables, graphs, open sentences, directed numbers and probability.

Applying High School Mathematics, Brown, Simon, Snader. 9 - 12. *

A developmental approach strengthens understanding of basic mathematical concepts by presenting practical applications.

Algebra I - Theory and Application and Algebra II and Trigonometry - Theory and Applications. 9 - 11. *

Texts and sixty visual transparencies each are included.

Using Algebra, 1973, Travers, Dalton, Brunner. 9 - 10. *

Practical applications are stressed with cartoons and many computational exercises. Special topics, such as computer programming in BASIC, are included at intervals. A postulational, expository approach provides a sound algebra basis for slower students. Trigonometry and probability are considered as optional topics. (1974)

LAIDLAW BROTHERS

Algebra - First and Second Courses, 1963, Brown, Williams, Montgomery. 9 - 11. *

Concepts, skills and the structure of the number system are stressed in these two texts.

Geometry - A Transformational Approach, Coxford, Usiskin. 9 - 12. *

Euclidean geometry is studied through the use of transformations in this text for average students. Proofs are introduced very gradually and are preceded by informal presentations of concepts. Few applications are included. (1974)

Geometry - Theory and Application, Fitzgerald, Lindblom, Zetterburg, Dalton. 10. *

Guided discovery is used to clarify theory and emphasize practical applications.

Geometry - Plane and Solid, 1963, Brown, Montgomery. 10.

A postulational system and developmental exercises are used. Chapters on trigonometry and coordinate geometry are included.

Student's Glossary of Arithmetical-Mathematical Terms.

LYONS AND CARNAHAN
407 East 25th Street
Chicago, Illinois 60616

Secondary

Synchro Math Experiences. 9 - 12. *

General math is presented against a background of experiences.

THE MACMILLAN COMPANY
8301 Ambassador Row
Dallas, Texas 75247

Elementary

The Papy Minicomputer, 1970, Papy. K - 3. *

This manipulative device gives children an understanding of operations with whole numbers and decimals. Place value and basic calculation procedures are introduced. It is for use by two students. The Teacher's Set is suitable for vertical display and demonstration.

THE MACMILLAN COMPANY

Elementary Mathematics Film Loops. K - 8.

A single-concept format for 40 topics is used. Fields studied include basic operations, fractions, geometry, measurement, graphing, sets, exponents, order relations, and logic.

Math Activity Cards, Clarkson. K - 8.

These 240 math lab projects in five levels stress concrete operations. Topics include graphs, shapes, measurements, patterns and reasoning.

MacMillan School Mathematics Program Developing Mathematics Series. 1970-73, Phillips, Thoburn, Sanders, Fitzgerald. K - 8. *

Concepts are introduced informally through involvement, and drill aids mastery of skills. Supplementary materials are available.

Secondary

From Arithmetic to Algebra, 1970, Lay. 7 - 8. *

This pre-algebra course in arithmetic introduces the beginning notions of algebra.

Individualized Math System. 7 - 9.

These forty consumable Lab Unit booklets provide two years of individualized instruction. A non-reading manipulative environment increases computational skills.

Understanding Modern Mathematics, Dausch, Moskowitz, Ranucci, Seltzer, Zoll. 7 - 12. *

These programmed texts to be used independently or as an introductory course in modern mathematics include topics such as bases and numerals, factors and primes, modular systems, number sentences, points, lines and planes, and probability.

Modern Mathematics, Volumes 1 and 2, 1968-69, Papy. 7 - 12.

"Discovery" and "axiomatic" methods of approach are combined in a graphic presentation. Volume I develops the ideas of sets, subsets, operations on sets and a simple algebra of sets. Volume 2 constructs the real numbers, first by the binary system and then by the decimal.

Mathematics for Liberal Arts Students, 1973, Olive. 9 - 12.

Discovery and experiment are encouraged by practical applications and relevant problems and examples. Topics include mathematical recreations, set theory and statistics.

Fundamentals of Mathematics, Fourth Edition, 1973, Richardson. 11 - 12.

This full year or one-semester course teaches mathematics as a part of human knowledge, culture and activity.

THE MACMILLAN COMPANY

Modern Mathematics Series, 1967-72, Johnson, Kinsella, Rosenburg, Reckzeh. 9 - 11. *

Each chapter begins with an orientation. The reading level is below-grade. Graded exercises, marginal annotations, discovery questions and comprehensive reviews are included.

Algebra: Its Structure and Applications introduces algebra and reviews the basic ideas of modern mathematics.

Geometry: A Dimensional Approach presents a sequential development of line, plane and space geometry.

Algebra and Trigonometry: Exploring Elementary Functions extends earlier concepts.

MacMillan Mathematics Program, Drooyan, Hadel, Carico, Hyatt, Hardesty. 9 - 11. *

The handbook-style format of this series identifies ideas explicitly as definitions, axioms or theorems. The books are cross-referenced. Algebra 1, Geometry, and Algebra 2 with Trigonometry are texts in the series.

Descriptive Geometry, Fourth Edition, 1971, Pare, Loving, Hill. 10. *

This text follows the traditional course outline. Topics include orthographic projection, intersection of planes and planes with solids, shades and shadows, and conics. The decimal system of dimensioning is used. Worksheets are available.

A Vector Approach to Euclidean Geometry, 1971-73, Vaughan, Szabo. 10 - 11. *

This two-year, two-volume course in geometry follows UICSM recommendations. A vector approach achieves geometric results and provides opportunities in algebra.

Trigonometry: An Analytic Approach, Second Edition, 1973, Drooyan, Hadel, Carico. 11 - 12.

A balance between theory and applications is maintained in this text for students who plan to specialize in math-related fields. Topics include circular functions, geometric vectors and complex numbers.

Essentials of Trigonometry, 1971, Drooyan, Hadel, Carico. 11 - 12.

The study of periodic properties of trigonometric and circular functions follows a review.

Analytic Geometry: A Precalculus Approach, 1970, Bohuslov. 11 - 12.

This text isolates and then combines the notions of analysis essential to the study of calculus.

Elementary Functions: Backdrop for the Calculus, 1973, Fobes. 11 - 12.

The principal properties of algebraic, exponential, logarithmic and trigonometric functions are discussed.

THE MACMILLAN COMPANY

Fields and Functions: A Course in Precalculus Mathematics, 1970, Bedford, Hammond, Best, Lux. 12. *

Formal and informal methods are used to develop the algebra of the real number field, elementary functions and complex numbers.

Analytic Geometry and the Calculus, Second Edition, 1969, Goodman. 12.

This beginning calculus text includes matrices and linear algebra.

Basic Mathematics with Electronic Applications, 1972, Smith, Burton.

This text integrates mathematical principles and electronic applications and requires a minimal background in mathematics.

Introductory Mathematics for Technicians, 1972, Auerbach, Gross. 11 - 12.

A broad selection of topics is included, following the recommendations of the Michigan study.

Basic Technological Mathematics, 1969, Crooks, Hancock. 9 - 12. *

This text is designed for technical, vocational or shop students who need simple math to perform adequately in chosen trades. Skills of manipulating formulas are stressed in solving problems relevant to jobs. The text is for poorly motivated or slower students.

MacMillan Mathematics Supplements, 1970, Possentier, Salkind, Stepelman. 9 - 12.

A variety of topics provides enrichment for average and above-average students.

Challenging Problems in Algebra, Volumes I and II parallels first- and second-year algebra courses.

Challenging Problems in Geometry parallels a standard geometry course (Volumes I and II) and more advanced topics.

Milestones in Geometry develops geometric themes in their historical setting.

Applied Boolean Algebra, 1966, Bohm. 12.

This is a simple introduction to the basic facts of Boolean algebra and its applications. High school math and physics are the needed background. (MAT)

Mathematical Recreations and Essays, 1962, Ball.

This is a classic. (MAT)

Number: The Language of Science, 1954, Dantzig.

This gives a historical treatment of the number concept and its importance in modern life. (MAT)

The Gentle Art of Mathematics, 1969, Pedoe.

Excursions range from probability to topology, with infinity, logic and Rorschach ink blots along the way. (MAT)

THE MACMILLAN COMPANY OF CANADA

Mathematical Pursuits One, 1973, Wigle, Dowling, Jennings. 10 - 12.

The reading level is rather high in this text designed to encourage students to "experience" mathematics. Topics include coordinate systems, relations, arithmetic fundamentals, angles, polygons, symmetry, reflection, rotation, patterns in algebra and in numbers, equations and inequalities, ratio and proportion, area and volume, vectors, similarity, the Pythagorean theorem, irrationals, presenting data and probability.

CHARLES E. MERRILL PUBLISHING COMPANY
1300 Alum Creek Drive
Columbus, Ohio 43216

Elementary

Discovering Mathematics, Cieslinski. K - 1.

This readiness text-workbook introduces basic concepts and encourages exploration.

Magic Squares, 1972, Sharp, Metzner. K - 6.

This book provides supplementary material.

Discovering Mathematics Series, DeVault, Osborn, Swenson, Treuhardt, Forester, Darling. 1 - 6. *

This series is suitable for use in non-graded systems. Teachability and a discovery approach are stressed. It proceeds from the specific to the general, and back to the specific for reinforcement.

Non-graded Math Topic-Texts, 1972. 1 - 6.

These spirit duplicating workbooks correlate with a cassette program.

Mastering Arithmetic Facts, 1972, Marriot. 3 - 8.

These cassette tapes are coordinated with student booklets involving basic arithmetic facts. They are good for individual instruction or reinforcement, according to the publisher.

Merrill Math Skilltapes, Sganga. 4 - 8.

Basic computational skills coordinate with these student booklets.

Secondary

Merrill Modern Math Workbook Series, 6 - 9.

Individual work is provided to practice, review or evaluate. Duplicating masters are available.

CHARLES E. MERRILL PUBLISHING COMPANY

Ideas from Rock Bottom: From Ideas to Computers, 1972, Nibbelink. 6 - 9.

Humorous narratives and cartoon illustrations present the four basic operations. Cassette tapes are included.

Discoveries in Modern Mathematics, Second Edition, 1972, Smith, Calder, Mehl, Rasmussen, Steinin. 7 - 8. *

Student participation and discovery learning are emphasized. The properties of operations and numbers, metric and non-metric geometry are included.

Introductory Geometry, 1972, Bassler, Curry, Hall, Mealy. 7 - 9. *

Informal skilltapes build on open-ended questions emphasizing guided discovery. Students set the learning pace, draw and manipulate geometric figures. Supplementary materials are available.

Discoveries in Essential Mathematics, 1972, Steinem, Ockerbloom. 8 - 11. *

This prealgebra text reinforces arithmetic skills and introduces the basic concepts of algebra and geometry. Chapters begin with puzzles and games. Students are guided to discovery of concepts in graphing, probability, sets, square and triangular numbers.

Algebra One, Vannatta, Goodwin, Crosswhite. 8 - 12. *

Discovery is emphasized by relating new concepts to previous math experiences. The use of properties of a number field and axioms of equality and inequality is stressed.

Basic Algebra, Moon, Davis. 8 - 12. *

These cassettes coordinate with booklets, allowing independent study and simultaneous sight and sound presentation. They are most beneficial for students with reading difficulties.

Algebra Two with Circular Functions, Vannatta, Goodwin, Crosswhite. 10 - 12. *

A discovery approach and spiral technique are used to develop concepts. Topics include a review, trigonometry, functions, properties of number fields, and axioms of equality and inequality.

Geometry, Goodwin, Vannatta, Crosswhite. 9 - 12. *

An inductive discovery approach uses set language and concepts to stress the development of logic and formal proof. Coordinate plane and solid geometry are blended.

Advanced Mathematical Concepts, Vannatta, Crosswhite. 11 - 12. *

This precalculus or terminal course includes topics and concepts from intermediate algebra through a study of elementary functions. Polynomial and circular functions are emphasized.

Mathematics for Career Education, 1972, Ewen, Nelson, Pickard, Thompson. 9 - 12. *

Math is presented practically by applying algebra, geometry, trigonometry and computer math to career-oriented problems.

Visual aids and tape recording equipment are also available.

MIDWEST PUBLICATIONS
P. O. Box 129
Troy, Michigan 48084

ELEMENTARY

Pre-Number Mathematics, Schippert. K - 6.

An activities approach introduces concepts using a coloring book theme. Topics include transformational geometry, topological properties of closed curves, sets, relations, functions, polygons, congruence and similarity. The verbal level is low. Three spiraled levels are included.

Primary Activities in Mathematics, Buckeye. 1 - 3.

Games and activities in basic operations, base ten system, measuring units, money, number concepts, problem-solving, time and weight are given.

No Read Math Activities, Buckeye. 1 - 6.

These two volumes in key sort form may also be used in junior and senior high. They are for poor readers.

INTERMEDIATE

Experiments in Fractions, Buckeye. 4 - 8.

Concrete activities help students to develop and understand the vocabulary, notation and operation of fractions. The reading level is low.

I'm OK, You're OK, Let's Go Metric!, Buckeye. 4 - 8.

These experiments and activities on four reading levels include linear, area, volume, liquid, weight, and temperature measurement.

Math Amusements in Developing Skills, Clack, Leitch. 4 - 9.

Various types of puzzles included in these two volumes help increase computational skills. Topics covered include whole numbers, fractions, mixed numbers, decimals, Roman numerals, and measurement. Particularly interesting is a section of holiday puzzles. (1974)

Amusements in Developing Metric Skills, Clack, Leitch. 6 - 9.

These tear-out workbook sheets are puzzles in areas of measurement. Linear, area, mass, volume, temperature and perimeter measurement are included. Extensive practice in computation with the metric system is provided in an interesting manner. (1974)

Creative Experiments in Algebra, Buckeye. 6 - 10.

Forty experiments for small group, individual or class instruction are given. The presentation is discovery-oriented.

MIDWEST

Retriev-O-Math, Smith, Wilhite. 7 - 9.*

This enrichment and motivational device consists of 76 cards involving experiments in algebra, arithmetic, geometry, logic, number theory and proof.

Computer Mathematics I. 7 - 9.*

Mathematical concepts used by computers are presented through games. The book is intended for a three week (or less) unit.

SECONDARY

Experiments in Probability and Statistics, Buckeye. 7 - 12.

These informal experiments can be done in any order. They introduce concepts through testing intuitive guesses by experimentation.

Experiments and Puzzles in Logic, Buckeye. 7 - 12.*

A pretest and 37 experiments are given. They include inductive and deductive reasoning, truth tables, Venn diagrams, Boolean algebra, electrical networks, Nim, tic-tac-toe, and other puzzles. The Teacher's Manual is rather limited. Some puzzles are insoluble, open-ended or well-known.

Mathematical Reasoning, Harnadek. 10 - 12.*

These self-contained units have many exercises. Discussion units and mathematical units are included. Topics include critical thinking, logic, advertising, other number systems, permutations, combinations, probability, debates, sets and mathematical systems. The units are suitable for enrichment or as a basal text for a two-semester course.

GENERAL

A Cloudburst of Math Lab Experiments, Buckeye, Ewbank, Ginther. 1 - 12.*

These key sort cards or books include experiments in various subject areas, including fundamental operations, sets, numeration and number theory, fractions, probability and statistics, applications, geometry, measurement, and enrichment. The five volumes include experiments at all levels and may be used with any text. (1974)

Math Experiments with Pentominoes, Ginther. 1 - 12.*

Experiments are explained on four reading levels.

Math Experiments with the Tangram, Ginther. 1 - 12.*

Four reading levels are provided.

Math Experiments with the 1-inch Color Cubes, Ewbank. 1 - 12.*

These experiments on four reading levels range from early number activities to geometry, measurement, and statistics.

MIDWEST

Math Experiments with the Geo-Strips, Ewbank. 1 - 12.*

This book explains experiments on four reading levels with angles, triangles, polygons and parallels.

Math Activities with Simple Equipment, Ginther. 1 - 12.*

Activities are rated by reading level and math concept area. They are suitable for traditional or open classrooms or the math lab.

Math Experiments with the Number Tablets, Ewbank. 1 - 12.*

These experiments, games, and puzzles on four reading levels use 10 x 10 grids containing the numbers 1 to 100.

Introducing the Metric System with Activities, Buckeye. 1 - 12.

Activities on linear, area, volume, liquid and temperature measurement are explained.

Cheap Math Lab Equipment, Buckeye, Ewbank, Ginther. 1 - 12.

Instructions for constructing equipment and suggested activities are given in the areas of place value, fundamental operations, number patterns, geometry, fractions, mathematical systems, logic sets, and strategy. A wide variety of activities are provided that are suitable for any classroom. (1974)

Independent Study Math Cards, Wiseman. 4 - 12.*

These 3 x 5 inch cards provide for sequential development of drills on fundamental concepts. The verbal level is low.

Creative Geometry Experiments, Buckeye. 4 - 12.

These 28 experiments use concrete, easily available materials.

Additional games and math lab equipment are also available.

THE M. I. T. PRESS
Cambridge, Massachusetts 02142

SECONDARY

The Universe, 1964, Struve. (MAT)

I Am a Mathematician, 1964, Wiener.

This book relates the historical background of an "ex-prodigy." (MAT)

Ex-Prodigy: My Childhood and Youth, 1964, Wiener. (MAT)

MONROE
47 West Eagle Road
Havertown, Pennsylvania 19083

Secondary

Azimuth, Wohlfort Rock, Epatein. 7 - 12.

This workbook uses the Monroe calculator and cartoons to motivate low-achievers.

Conceptual Mathematics Through Programming, Hill, Burke. 9 - 12.

This book uses the Monroe calculator in statement of problems, discussion, program and text examples. Codes indicate the difficulty level of the problems.

MOTIVATION DEVELOPMENT, INC.
387 Mountain View Drive
Bishop, California 93514

Secondary

Success in Mathematics, Glenn. 7 - 12. *

This continuous-progress individualized course for low and middle ability students is in two parts. Part 1 concerns basic arithmetic skills; Part 2 deals with technical math, such as geometry, trigonometry, slide rule, construction and statistics. Objectives are clearly stated. Pre-tests, explanations, projects, review problems and exams are included. (1974)

MU ALPHA THETA

Chips from the Mathematical Log, 1966, Andree.

More Chips from the Mathematical Log, 1970, Andree.

Up-to-date topics of moderately advanced mathematics are introduced and discussed.

MC GRAW-HILL BOOK COMPANY
Hightstown, New Jersey 08520

General

Programmed Math, Books 1 - 15, Sullivan Associates. 1 - 12. *

Verbalization is minimal in this series of programmed texts stressing fundamental operations. Word problem books are also available. The second series studies consumer and personal math, algebra, geometry and trigonometry.

Elementary

Mathematics Experience Program, Dienes. K - 6. *

This multimedia program reinforces the basic ideas of number, geometry and logical reasoning. Math lab materials, worksheets, games, and booklets are included.

Map Skills Transparency Series. K - 6. *

Devices such as symbols, models and scale are used in this sequential program. Two sets of transparencies are included.

Elementary Mathematics: Concepts, Properties and Operations, Spitzer, Banks, Burns, Kahrs, Folsom. 1 - 6. *

A strong inductive approach develops concepts, properties and operations through discussion and alternate solutions. Workbooks are available for grades 3 - 6.

Introduction to Multiplication, Armstrong, Porter, Spitzer. 2 - 3.

This is a text-workbook for children who have learned addition, but have not yet mastered multiplication. It is programmed and nonverbal, using the discovery method.

New Mathematics System, 1973, EDL. 3 - 4.

This multimedia individualized program uses the math lab extensively. Levels 5 - 8 will be available at a later date.

Word Problems Programmed, Armstrong, Porter, Spitzer. 3 - 9.

This programmed text-workbook gives practice in verbal skills by helping to determine which operations are necessary to solve the problems.

Bucknell Mathematics Self-Study System 1, Hauck. 5 - 8. *

These programmed books include self-texts, review frames and overviews. Topics include fractions, decimals and percentages. The system is especially appropriate for under-achievers, according to the publisher.

MC GRAW-HILL BOOK COMPANY

The Learning Skills Series: Arithmetic, Hunter, LaFollette. *

These four texts provide for the prevocational requirements of pupils with low IQs. The series is suitable for individualization. The texts may also be used as a modified core curriculum.

Secondary

Mathematics: Concepts, Properties and Operations, Spitzer, Banks, Burns, Kahrs, Folsom. 7 - 8. *

In this series, students inductively discover generalizations. Book 7 includes a review, relations and functions and operations on the set of integers. Book 8 includes a review, subsets of the real numbers (whole, natural and rational numbers), mappings and functions. Workbooks and duplicating masters are available.

Preparatory Mathematics, Yager, Hirth. 7 - 9.

This text reviews prior mathematics study to prepare students for an investigation of algebra and geometry.

Basic Mathematics, Steinhoff, 1973. 7 - 9.

This prealgebra text includes sample problems from business and engineering. Decimal accuracy is stressed. Pretests are included.

Using Mathematics, Third Edition, Henderson, Pingry. 9.

This basic text combines applications of trade mathematics with concepts of algebra, geometry and trigonometry. No reference is made to the grade level.

Foundation Mathematics, Third Edition, Bartoo, Osburn, St. Jean. 9.

This text-workbook for slower students reviews decimals, percentage and fractions and introduces "business math.

Fundamentals of Arithmetic, Braut. 9 - 12.

This program for skill development includes the study of the natural numbers, negative and rational numbers, decimals, powers of ten, simple equations and percents.

A Survey of Basic Mathematics, Third Edition, Sparks. 10 - 12. *

This text-workbook reviews arithmetic, algebra through quadratic equations, and numerical trigonometry. Traditional subject matter with modern terminology and approach is included.

Developmental Arithmetic: An Individualized Approach, 1973, Curl. 10 - 12.

The basic arithmetic skills are emphasized. A creative problem introduces each of 15 units. Topics include combinations, counting, Fibonacci numbers, geoboard, golden mean, googols and googolplexes.

MC GRAW-HILL BOOK COMPANY

Algebra: Its Elements and Structure, Books I and II, Second Edition, Banks, Sobel, Walsh. 9 - 12. *

Significant concepts are introduced inductively. Book I studies sets, absolute value, inequalities, proof, functional notation and other usual topics of first-year algebra. Book II includes a functional approach to trigonometry, linear, quadratic, polynomial, exponential and logarithmic functions, mappings, congruence, sequences, series and probability. The style is direct, and language is simple. (1974)

Fundamentals of Elementary Algebra and Fundamentals of Intermediate Algebra, Eraut. 9 - 12.

Topics basic to competence in algebra are studied. The text may be used for review or remedial work.

Algebra Review Manual: A Program for Self-Instruction, Reigh, Hauck. 9 - 12. *

This text-workbook reviews basic topics in algebra. The first five chapters are also available separately in Brief Algebra Review Manual.

Geometry: Its Elements and Structure, 1972, Banks, Posamentier, Bannister. 9 - 10. *

This is a traditional text for the average student. It inductively develops the concepts of analytic geometry, trigonometry, non-Euclidean and vector geometry. The transformational approach is not used.

Algebra and Trigonometry, Second Edition, Rees, Sparks. 10 - 12. *

An axiomatic approach coordinates trigonometry and algebra.

Algebra, Trigonometry, Analytic Geometry, Rees. 10 - 12. *

This precalculus course is based on the author's text Algebra and Trigonometry with geometry topics added.

Modern Algebra and Trigonometry, Robison. 10 - 12. *

Traditional topics are developed through the use of the concepts and techniques of set theory.

College Algebra, Sixth Edition, Rees, Sparks. 10 - 12. *

Field axioms are used in all proofs and procedures. Topics include number systems, fundamental operations, fractions, exponents, radicals, equations and inequalities.

College Algebra, Heineman.

Solved examples and practice exercises try to balance traditional and "modern" approaches to algebra.

MC GRAW-HILL BOOK COMPANY

Contemporary Trigonometry, 1973, Taylor, Wade. 11.

This concise modern introduction to trigonometry includes historical notes.

Plane Trigonometry with Tables, Fourth Edition, Fuller. 10 - 12. *

This text is well-suited for students preparing for analytic geometry and calculus.

Contemporary Analytic Geometry, Wade, Taylor. 11 - 12. *

This text includes an algebra review, vector concepts, graphs of inequalities, linear programming, polar coordinates and solid analytic geometry.

Analytic Geometry, Third Edition, Middlemiss, Marks, Smart. 11 - 12. *

This text for a one-semester precalculus course discusses polynomials, rational fractional functions, graphs and properties of exponential, logarithmic and trigonometric functions, vectors and vector methods.

Fundamental Mathematics, Third Edition, Wade, Taylor. 10 - 12. *

Topics include sets, number systems, operations on numbers, equations and inequalities, trigonometry, functions, relations, graphs, probability, statistics, logarithms, interest and annuities. This text is designed for above-average students.

Principles of Mathematics, Third Edition, Allendoerfer, Oakley. 10 - 12. *

This precalculus text includes the systematic use of vectors, matrices, linear algebra, logic, and sets.

Fundamentals of Freshman Mathematics, Third Edition, Allendoerfer, Oakley. 11 - 12. *

Logic, inequalities, linear programming, vectors and matrices are studied. (MAT)

A Prelude to the Calculus, Pownall. 11 - 12. *

This precalculus text includes the concepts and theory of the real number system, functions and limits. It is designed for a one-semester honors course.

Precalculus Mathematics, Henderson, Usiskin, Zaring. 11 - 12.

Mathematical induction is introduced early and used throughout this text to increase understanding and skill in operations.

Introduction to Calculus with Analytic Geometry, 1970, Andree. 12.

This is an "easy-to-follow" introduction to differential and integral calculus. (MAT)

MC GRAW-HILL BOOK COMPANY

Calculus with Analytic Geometry, Rees, Sparks. 12. *

Many exercises and problems are included in this introductory course for science and engineering majors.

Calculus with Analytic Geometry, Durfee. 12.

An intuitive understanding of calculus is stressed. Knowledge of properties of the real numbers is assumed.

Calculus and Analytic Geometry, 1973, Stein. 12.

Calculus and analytic geometry are treated simultaneously in this student-oriented text.

Sets - Relations - Functions, Second Edition, Selby, Sweet. 10 - 12.

This text provides an introduction to set theory.

Elementary Algebra, Wallace. 10 - 12. *

The development of structural details and set theory are stressed in discussing the real number system, polynomials, polynomial fractions, systems of equations, relations, functions, graphs and complex numbers in this text for advanced levels.

Elementary Algebra: Structure and Use, Barnett. 11 - 12. *

This introductory course in algebra shows the relevance of mathematics to problems of the real world from the social and life sciences.

Introduction to Mathematical Ideas, Crowdis, Wheeler. 11 - 12. *

Topics include historical examples of numerical systems, digital computers, logic and probability. This text is intended for non-mathematically oriented students.

Concepts of Probability, Guenther. 11 - 12. *

This precalculus level introduction to probability emphasizes applications.

Introduction to Computer Science Mathematics, 1973, Jameson. 10 - 12.

The major concepts essential to programming are presented through the use of a short version of FORTRAN. Boolean algebra is introduced. Knowledge of first-year algebra is assumed.

Mathematics for Data Processing, DeAngelo, Jorgensen. 11 - 12. *

This text provides a non-rigorous course in the mathematics required for data processing. Machine language, FORTRAN and COBOL are used.

Computer Usage/Fundamentals, Weiss. 11 - 12. *

This computer survey course includes history, applications, programming, coding, the computer industry, systems analysis, job opportunities and qualifications.

MC GRAW-HILL BOOK COMPANY

Basic Slide Rule Operations, Second Edition, Mittelstadt. 9 - 12.

This programmed text-workbook explains the operations and applications of the slide rule.

Mathematics, Queen and Servant of Science, 1951, Bell.

Concepts and pioneers of math from Euclid to Einstein are discussed. (MAT)

Number Theory and its History, 1943, Ore. (MAT)

Mathematical Quickies, 1967, Trigg. (MAT)

The Compleat Strategyst, 1966, Williams.

The theory of game strategy is introduced. (MAT)

Exploring Mathematics on Your Own, Johnson, Glenn, Norton. 7 - 12.

These short booklets on elementary topics are to be used as supplements. Titles are:

1. Sets, Sentences and Operations
2. Adventures in Graphing
3. The Pythagorean Theorem
4. Topology - the Rubber-Sheet Geometry
5. The World of Statistics
6. Understanding Numeration Systems
7. The World of Measurement
8. Number Patterns
9. Computing Devices
10. Fun with Mathematics
11. Short-cuts in Computing
12. Invitation to Mathematics
13. Logic and Reasoning in Mathematics
14. Probability and Chance
15. Curves in Space
16. Finite Mathematical Systems
17. Basic Concepts of Vectors
18. Geometric Constructions

Handbook of Mathematical Tables and Formulas. Fifth Edition, Burington. 11 - 12.

This handbook includes a summary of the formulas and theorems of algebra, trigonometry, analytic geometry, calculus and vector analysis, as well as tables.

Schaum Outline Series. 9 - 12.

Numerous problems, solved and as exercises, in varied fields are given.

Other materials for the mathematics library, a portable analog computer, and a logic circuit board are also available.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Secondary

Space Mathematics: A Resource for Teachers, 1972, Reynolds. 7 - 12.

Realistic mathematics problems relating to space science on topics such as measurement, algebraic concepts, variation, quadratic equations, probability, exponents, geometry, trigonometry, the sphere and conic sections are included.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS
1906 Association Drive
Reston, Virginia 22091

Elementary

Experiences in Mathematical Ideas, Volumes 1 and 2. 5 - 8. *

This book is designed to help stimulate slow learners through lab-oriented worksheets and activities.

Secondary

Experiences in Mathematical Discovery. 9 - 12.

This general math series uses a discovery approach for the non-college bound. Nine pamphlets discuss formulas, graphs and patterns, properties of operations, mathematical sentences, geometry, arrangements and selections, mathematical thinking, rational numbers, and positive and negative numbers.

Topics for Mathematics Clubs, Dalton, Snyder. 11 - 12.

This collection of topics is organized to give a feeling for each topic as a whole through the student presentation of subtopics. Topics included are Fibonacci sequences, topology and non-Euclidean geometry.

Mathematics and My Career, Turner.

Seven former mathematics contest winners discuss the usefulness of math.

Paperfolding for the Mathematics Class, 1957, Johnson.

Illustrated directions are given for folding the basic constructions, geometric concepts, circle relationships, products and factors, polygons, knots, polyhedrons, symmetry, conic sections and recreations. (NAT)

Mathematical Challenges, 1965, Charosh.

A variety of challenging problems are given. (NAT)

Polyhedron Models for the Classroom, Wenninger.

This book presents directions for constructing models, with notes on the history and mathematics of polyhedra.

A Bibliography of Mathematical Recreations, 1970, Schaaf.

These three volumes list over 5000 references. (NAT)

Some Ideas About Number Theory, 1961, Barnett.

The elementary results of number theory and applications for the classroom are included. (NAT)

Historical Topics from Algebra.

This pamphlet is a reprint from the 31st Yearbook.

Numbers and Numerals, 1937, Smith, Ginsburg.

This is an illustrated account of the history of numbers.

Number Stories of Long Ago, Smith.

The probable history of numbers is related in this pamphlet.

Perfect Numbers, Shoemaker.

The history and ties with high school math are presented. Exercises are provided.

The Pythagorean Proposition, 1968, Loomis.

This historical review presents 370 demonstrations of the Pythagorean theorem. (NAT)

An Introduction to Continued Fractions, 1964, Moore. (NAT)

Secret Codes, Remainder Arithmetic and Matrices, 1961, Peck.

This enrichment pamphlet uses secret codes to introduce ideas from modern mathematics. (NAT)

A Portrait of $\sqrt{2}$, 1964, Ringenberg.

This pamphlet discusses the number 2 as an integer, a rational number, a real number and a complex number. (NAT)

Vectors in Three Dimensional Geometry, 1961, Glicksmann. (NAT)

The Trisection Problem, 1971, Yates.

NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

How to Study Mathematics: A Handbook for High School Students, Swain. 9 - 12.

This booklet provides suggestions about doing homework, making the most of class periods and taking exams.

Introduction to an Algorithmic Language (BASIC).

Computer Oriented Mathematics, 1963.

The basic principles of automated computation are presented. Ideas for classroom use, problems, solutions, a bibliography, glossary and index are included.

NATIONAL TEXTBOOK COMPANY
8259 Miles Center Road
Skokie, Illinois 60076

Elementary

Let's Play Games in Mathematics, Henderson. K - 8.

These teacher source books include games with specific objectives to reinforce or develop concepts. Motivation is provided for individual or small group work. One book is available for each grade.

Purpose Puzzles, Long, Cech. 1 - 6.

These developmental puzzles with specific objectives are compatible with most texts, according to the publisher.

Let's Play Games in Metrics, Henderson, Glunn. 1 - 12.

The history of measurement, basic units, conversion and metric computation are discussed. Games and activities are identified by topic and grade level.

Intermediate

Math Games for Greater Achievement, Henderson. 4 - 9.

This source book includes 213 objective-associated motivational games and activities for underachievers. Topics include operations with integers and fractions, mathematical sentences, ratio and proportion, properties and problem-solving. (1974)

The Young Mathematician Workbooks, McCutheon. 6 - 8.

These six workbooks use trial-and-error and inductive reasoning to help the student broaden his mathematical concepts independently.

NATIONAL TEXTBOOK COMPANY

Secondary

Let's Play Games in General Mathematics, Henderson, Glunn. 9 - 12.

This book attempts to strengthen the learning of fundamental concepts through games and activities related to specific objectives.

Color rods and other supplementary materials are also available.

THE NEW AMERICA LIBRARY
1301 Avenue of the Americas
New York, New York 10019

Secondary

The Universal Encyclopedia of Mathematics, 1965.

This compact reference book includes the definition and clarification of terms and various tables. (MAT)

NEW YORK UNIVERSITY PRESS
32 Washington Place
New York, New York 10003

Secondary

Mathematics, Rapport, Wright. 10 - 12.

This is a collection of articles ranging from biography to elementary mathematical exposition.

Relativity in Illustrations, 1962, Schwartz. 11 - 12.

The basic physical ideals behind theory of relativity are explained.

The Great Mathematicians, 1961, Turnbull.

The biographical history of mathematics from early Egyptians to great men of the twentieth century is given. (MAT)

W. W. NORTON AND COMPANY, INC.
55 Fifth Avenue
New York, New York 10003

Secondary

PreCalculus: Fundamentals of Mathematical Analysis, 1973, Lorch. 11 - 12.

Although this text designed for college freshmen is mathematically rigorous and includes some difficult concepts, it is suitable for use by high school students. Many exercises, proofs and applications are presented on the topics of functions and number systems. (1974)

W. W. NORTON AND COMPANY, INC.

Calculus, 1973, Gillman, McDowell. 12.

This text is designed for use as a three-semester course on a college level and is perhaps too abstract for high school students. Topics include vectors, polar coordinates, functions of several variables, partial derivatives, multiple integrals, infinite series and differential equations. Applications of derivatives and integrals are also included. (1974)

How to Lie with Statistics, 1954, Huff, Geis.

The basic concepticns and misconceptions of statistics are explained. (MAT)

How to Take a Chance, 1959, Huff, Geis.

Chance, probability and error as applied to everyday life are presented. (MAT)

The Education of T. C. Mits, 1944, Lieber, Lieber.

This book relates an interesting philosophy as well as mathematics. (MAT)

PENGUIN BOOKS, INC.
7110 Ambassador Road
Baltimore, Maryland 21207

Elementary

Words for Number. K - 1.

These three workbooks present words used most frequently in situations involving numbers.

Basic Arithmetic. 1 - 4.

These four graded books present addition, subtraction, multiplication and division.

Secondary

Mathematician's Delight, 1943, Sawyer.

Geometry as "the science of furniture and walls," algebra as "the shorthand of mathematics," graphs as "thinking in pictures," and trigonometry as "making tunnels and maps" are presented. (MAT)

A Path to Modern Mathematics, Sawyer.

This text provides a review of new methods.

PENGUIN BOOKS, INC.

Prelude to Mathematics, 1955, Sawyer.

Stimulating and surprising branches of mathematics are explored. (MAT)

The Search for Pattern, Sawyer.

This book explains the design of the Morse code, the reproductive pattern among blowflies, and the random behavior of molecules, dice and football teams in mathematical terms.

Vision in Elementary Mathematics, Sawyer. 7 - 12.

The fundamentals of arithmetic and algebra are presented.

Dictionary of Computers, Chandor (ed.)

Electronic Computers, Hollingdale, Tootill.

Facts from Figures, Moroney.

PERGAMON PRESS, INC.
Maxwell House
Fairview Park
Elmsford, New York 10523

Secondary

Exercises in Modern Mathematics, 1965, Marjoram.

The fundamental notions of mathematics are introduced. (MAT)

Topics in Geometry, 1963, Perfect.

This book is designed for better-than-average students. (MAT)

PHILOSOPHICAL LIBRARY
15 East 40th Street
New York, New York 10016

Secondary

Computer Appreciation, Fry. 11 - 12.

The historical development, hardware, programming, organization of data-processing departments, applications, and effects of computers are studied.

PHILOSOPHICAL LIBRARY

Computer Languages: A Practical Guide to the Chief Programming Languages.

This text includes Algol 60, FORTRAN, COBOL, PL/1, and extended mercury autocode. It is intended for more advanced students.

Mathematics for Everyone, 1966, Klinger.

This is an elementary algebra refresher, with time taken for digressions. (MAT)

PRENTICE-HALL, INC.
Englewood Cliffs, New Jersey 07632

Secondary

Intuitive Concepts in Elementary Topology, 1962, Arnold. 11 - 12.

This book presents the rudiments of algebraic topology and develops point-set topology fundamentals. (MAT)

Introduction to Finite Mathematics, Second Edition, 1966, Kemeny, Snell, Thompson.

This is a unified treatment of logic, set theory, probability, linear algebra, Markov chains, linear programming and game theory.

Prelude to Analysis, 1966, Rosenbloom, Schuster. 12. *

This book provides a background in the real number system. (MAT)

PRINCETON UNIVERSITY PRESS
Princeton, New Jersey 08540

Secondary

The Enjoyment of Mathematics, 1957, Rademacher, Toeplitz.

Each chapter begins with simple demonstrations and advances to research-type problems. (MAT)

Symmetry, 1952, Weyl. (MAT)

PRINDLE, WEBER AND SCHMIDT
53 State Street
Boston, Massachusetts 02109

Secondary

Introduction to Geometrical Transformations, 1966, Barry. 11 - 12.

This book is a beginner's projective geometry and is recommended for superior students with one year of geometry. (MAT)

In Mathematical Circles, 1969, Eves.

These two volumes present 360 brief notes of a mathematical-historical nature. (MAT)

Computer Applications for Calculus, 1972, Dorn, Bitter, Hector. 12.

This text augments the usual calculus course by illustrating a computer approach to many topics. Both BASIC and FORTRAN programs follow uncomplicated discussions of basic definitions and theorems of calculus. It is cross-referenced to 15 widely-used calculus texts.

RANDOM HOUSE
School Division
201 East 50th Street
New York, New York 10022

Elementary

Random House Mathematics Program, Suppes, Smith, Easterday, Firl, Carr, Kaplan, Phillips, Bredehorn. K - 6. *

A laboratory atmosphere develops the study of mathematics through experience. Strong skill development and the contemporary content help develop problem-solving techniques with respect to reading skills. Duplicating masters and workbooks are available.

Sets and Numbers, Revised Edition. K - 6. *

This is a modern elementary program stressing the concepts, structure and logic of mathematics. Duplicating masters and workbooks are available.

Visualizing Elementary Mathematics, Phillips. K - 8.

Students visualize mathematical concepts through the use of overhead transparencies and flannelboard kits.

Meters, Liters and Grams, Buffington. 3 - 8.

These six soft-cover student workbooks to supplement a basal program use language appropriate to the grade level. No conversions are included.

RANDOM HOUSE

Individualized Mathematics: Drill and Practice Kits, Suppes, Jerman. 3 - 9. *

These four drill and practice kits emphasize basic mathematical skills.

Experiencing Mathematics, Collins, Nanney, Rickey, Gay. 5 - 9. *

These five paperbound workbook-format texts for students experiencing difficulties with basic arithmetic use a spiral development and an informal approach. Each volume covers about one semester's work.

Secondary

Sets, Numbers and Systems, Books 1 and 2, Suppes, Jerman. 7 - 8. *

This is a step-by-step program where students learn by doing.

Modern Mathematics, Second Edition, Books 1 and 2, Skeen, Whitmore. 9 - 11. *

This is a two-year course consisting of a program in elementary algebra and an introduction to basic concepts of geometry, trigonometry and probability. A spiral development is used. Review, evaluation and application techniques emphasize operations involving algebraic expressions.

Usine Modern Mathematics: Structure-Applications, 1973, Skeen. 9 - 11. *

This text is specifically for the student who may terminate his mathematics study with this course.

Algebra One and Algebra Two, 1973, Moser, Becker, Phillips, Starr. 8 - 11.

Concepts are made easier through tables, illustrations and graphs. In the first text, exponents and radicals are introduced in chapter 4 and not used again until chapter 10 on polynomials. There are many exercises included except in the section on factoring. Flowcharts and algorithms keyed to the work of each chapter are included. (1974)

Individualized Mathematics: Algebra Skills Kit FF, Moser, Becker, Phillips, Starr. 9 - 10. *

Students work individually to develop and reinforce basic algebra skills.

Principles of Advanced Mathematics, Revised Edition, 1970, Meserve, Pettofrezzo, Meserve. 12. *

Exercises, practice and tests prepare the pupil for calculus. Topics include trigonometric functions, analytic geometry, vectors, matrices, logic, probability, structure of the number system, and the theory of limits.

RANDOM HOUSE

Modern Mathematics in the Elementary and Junior High Schools, Second Edition, 1970, Williams, Read, Williams. 9 - 12. *

This book includes definitions, examples, exercises, summaries and tests to provide for comprehension of topics in modern mathematics, practice in applying skills and a full preparation in the terminology of modern mathematics.

A Guide to Modern Mathematics, Herrick. 9 - 12.

The basic principles of the "new" mathematics are explained for high school students, teachers and parents.

The Analytical Engine: Computers - Past, Present and Future, 1965, Bernstein.

This is a historical and non-technical exposition about computers. (MAT)

Makers of Mathematics, 1958, Hooper. (MAT)

New Mathematical Library (NML) - The SMSG Library. 9 - 12.

This is a paperback collection of supplementary readings.

Numbers: Rational and Irrational (NML1), Niven. 11 - 12.

This is an exposition of number systems including trigonometry, logarithms, approximation of irrationals and transcendental numbers. (1974)

What is Calculus About? (NML2), Sawyer.

This book intuitively develops the basic concepts of mathematics such as speed, acceleration, and volume.

An Introduction to Inequalities (NML3), Backenbach, Bellman. 11 - 12.

This book provides an axiomatic treatment of inequalities, including proofs of classical inequalities and applications such as maximization, minimization and distance. (1974)

Geometric Inequalities (NML4), Kazarinoff. 11 - 12.

This is an informal presentation of arithmetic and geometric mean inequalities and discussion of several principles with an emphasis on problem-solving. (1974)

The Lore of Large Numbers (NML6), Davis. 12.

This book develops an understanding of the less obvious properties of numbers. It includes approximate computation, estimation and problems. (1974)

Uses of Infinity (NML7), Zippin.

This book develops infinity as a tool essential to all branches of mathematics.

Geometric Transformations (NML8), Yaglom. 11 - 12.

This book develops isometries to solve problems arising from familiar geometric facts. (1974)

Continued Fractions (NML9), Olds. 11 - 12.

This book expands fractions to continued fractions. It includes Diophantine equations and irrationals expressed as infinite continued fractions. (1974)

Graphs and Their Uses (NML10), Ore. 11 - 12.

The four-color problem and Euler's formula for polyhedra are discussed. (1974)

Hungarian Problem Books I and II (NML 11 and 12). 12.

These books provide in-depth problems employing simple concepts in a diverse number of elementary mathematical fields. (1974)

Episodes from the Early History of Mathematics (NML13), Aaboe. 10 - 12.

Babylonian systems, Euclid, Archimedes and Ptolemy are included. (1974)

Groups and Their Graphs (NML14), Grossman, Magnus. 9 - 12.

This book introduces group theory. Abstract groups are made more concrete in patterns corresponding to group structure. (1974)

The Mathematics of Choice (NML15), Niven. 10 - 12.

This problem book offers a preparation for probability study and stresses combinatorial mathematics, revealing a variety of methods for solving counting problems. (1974)

From Pythagoras to Einstein (NML16), Friedrichs. 10 - 12.

The Pythagorean theorem and the basic facts of geometry are discussed in mathematical and physical contexts, including the theory of relativity. (1974)

The MAA Problem Book II (NML17), Salkind.

No mathematics beyond intermediate algebra is needed. The problems use elementary procedures and sophisticated alternatives. They are taken from high school math contests in 1961 - 65. (1974)

First Concepts of Topology (NML18), Chinn, Steinrod. 12.

This book develops topology and simple applications of topology. It includes proofs of the Existence Theorems, polynomials, mappings, and vector fields. (1974)

Geometry Revisited (NML19), Coxeter, Greitzer.

This book introduces transformations, inversive geometry and projective geometry to elementary geometric concepts. Many subjects are linked with the branches of geometry. Conics are included. (1974)

RANDOM HOUSE

Invitation to Number Theory (NML20), Ore.

This book introduces number theory through many problems and solutions.

Geometric Transformations II (NML21), Yaglom.

This book deals with similarity transformations and includes many problems and solutions.

Elementary Cryptanalysis - A Mathematical Approach (NML22), Sinkov.

This book introduces cryptography and includes modular arithmetic, linear algebra of two dimensions, combinatorics and statistics. Other topics are developed as needed to solve decoding problems.

Ingenuity in Mathematics (NML23), Honsberger.

19 essays reveal the approaches used in thinking about number theory, geometry, logic, combinatorics and probability.

Geometric Transformations (NML24).

The Contest Problem Book, Salkind. 9 - 12.

Problems from the annual high school contest of MAA are given. A knowledge of intermediate algebra is required. (1974)

THE RONALD PRESS COMPANY
79 Madison Avenue
New York, New York 10016

Secondary

The Nature of Number: An approach to Basic Ideas of Modern Mathematics, 1952, Dubisch. (MAT)

W. H. Sadlier, Inc.
11 Park Place
New York, New York 10007

Elementary

Sadlier Contemporary Mathematics. K - 8.

Basic mathematical concepts, computational skills and problem-solving are stressed through extended drills and tests.

W. H. SADLIER, INC.

Mastering Mathematics. K - 8.

These non-graded, workbook-format texts require minimal reading ability and use a self-directed approach for review, remediation and basic presentation of basic mathematics for students with reading deficiencies. Simple graphic problems and many applications are included. Duplication masters are available.

Systemathix. 2 - 9.

This programmed text-workbook is carefully structured to provide student success. Self-help and direct remediation for skill building in elementary mathematics is provided for those with learning difficulties.

SCHOLASTIC BOOK SERVICES
904 Sylvan Avenue
Englewood Cliffs, New Jersey 07632

Elementary

Self-Teaching Arithmetic Books 1 - 4.

These five books provide for individual study and practice and remedial work in the basic operations.

Secondary

Arithmetricks, Meyer. 7 - 12.

This supplement for individual study includes number tricks.

SCHOOL MATHEMATICS STUDY GROUP
% A. C. Vroman, Inc.
2085 East Foothill Boulevard
Pasadena, California 91109

Elementary

Developing Mathematics Readiness in Preschool Programs. *

Activities for the culturally disadvantaged child are given.

Mathematics for the Elementary School, Special Edition. K - 1. *

This is for use with culturally disadvantaged children.

SCHOOL MATHEMATICS STUDY GROUP

Mathematics for the Elementary School. K - 6. *

This is a basal text. Grades 4 - 6 presuppose a conventional program through grade 3. The series will not be reprinted.

Probability for Primary Grades and Probability for Intermediate Grades. 1 - 6.

Spinners are available with the pamphlets.

Secondary

Secondary School Mathematics. 7 - 9.

This series provides an intuitive basis for high school math. It presents a new curriculum including informal geometry. It is prepared for students with a conventional background.

Mathematics for Junior High School, Volumes I and II. 7 - 9.

These books will not be reprinted.

Introduction to Secondary School Mathematics, Volumes I and II. 7 - 9. *

A reduced level of reading difficulty is used for students slightly below average in ability.

Secondary School Mathematics, Special Edition. 7 - 9. *

A reduced reading level is used for below-average students. This book is a specially-prepared version of the first few chapters of Secondary School Mathematics.

Introduction to Algebra. 8 - 9. *

A lower level of reading difficulty is used for slightly below-average students.

Mathematics Through Science, Parts 1 - 3. 7 - 9. *

These booklets use simple experiments from physical science to introduce and motivate mathematical ideas. (1974)

Mathematics and Living Things. 8. *

This book uses simple experiments from biological science.

Junior High School Supplementary Unit. 7 - 8.

This supplement for abler students has been discontinued.

High School Textbooks.

These 12 texts were developed for the average and above average student in a college preparatory program.

First Course in Algebra will not be reprinted.
Geometry will not be reprinted.

High School Textbooks (continued)

Intermediate Mathematics, 11, will not be reprinted.
Elementary Functions, 12, will not be reprinted.
Introduction to Matrix Algebra. 11 - 12.
Programmed First Course in Algebra. 9. A separate response booklet allows the text to be reused.
Geometry with Coordinates. 10. This alternative to Geometry puts more emphasis on analytic geometry. It will not be reprinted.
Analytic Geometry. 12.
Algorithms, Computations, and Mathematics. 12. * This one-semester course concerns concepts basic to computer science. Supplements for FORTRAN and ALGOL are available.
Calculus. 12. A three-part course is provided.
Calculus of Elementary Functions interweaves the content of Elementary Functions with an introduction to differential and integral calculus.
Secondary School Advanced Mathematics bridges the gap between the junior high course and the 11th and 12th grade texts.

Essays on Number Theory I and II. 9 - 12. Discontinued.

Development of the Real Number System. 11. Discontinued.

SMSG Library. See listing under Random House.

Introduction to Probability. Part I: Basic Concepts and Part II: Special Topics.

These are two programmed texts. Part I is for grades 7 and 8, Part II for grades 9 - 12.

SMSG Supplementary and Enrichment Series.

These pamphlets are for independent study or enrichment.

Systems of First Degree Equations in Three Variables, Calloway. * Graphs and algebraic solutions are discussed.
Factors and Primes, Syer. 7 - 12. * Divisibility, greatest common factor, and least common multiple are discussed.
Numeration, Schurrer. * Binary and duodecimal numeration systems are presented.
Non-metric Geometry, Clark. * An intuitive approach is used.
Functions, Dubisch. * This book supplements second-year algebra.
Circular Functions, Dubisch. * This book supplements trigonometry.
Inequalities, Bridgess. * One and two variables are discussed.
Plane Coordinate Geometry, Hill. *
The Complex Number System, Kalman. This book includes operations, quadratics and polynomials.
The System of Vectors, Kalman. Vectors, scalars, and applications in math and physics are presented.
Absolute Value, Bridgess. Graphs, quadratics, complex numbers and vectors are discussed.
Mathematical Systems.

SCHOOL MATHEMATICS STUDY GROUP

S & E Series - Discontinued:

Order and the Real Numbers: A Guided Tour.
The Mathematics of Trees and Other Graphs.
Algebraic Structures, Syer. 11 - 12.
Radioactive Decay, Clark.
Mathematical Theory of the Struggle for Life.
1 + 1 = ?, Scheid.

SMSG Reprint Series.

These pamphlets are devoted to a particular topic in mathematics and contain reprints of articles selected from a variety of journals.

Geometry, Measurement and Experience.
Prime Numbers and Perfect Numbers, Schaaf. 11 - 12.
Structure of Algebra, Schaaf.
What Is Contemporary Mathematics?
Mascheroni Constructions.
Space, Intuition and Geometry.
Nature and History of Pi.
Computation of Pi.
Mathematics and Music.
The Golden Measure.
Geometric Constructions.
Memorable Personalities in Mathematics: Nineteenth Century.
Memorable Personalities in Mathematics: Twentieth Century.
Finite Geometry.
Infinity.

SCIENCE RESEARCH ASSOCIATES
1000 Westchester Avenue
White Plains, New York 10604

Elementary

New SRA Mathematics Learning System, 1974, DeVault, Greenberg, Frehmeyer, Bezuzka. K - 8. *

Behavioral objectives are used in an informal approach. Optional multimedia components are used. The relevance of math to the pupil and his environment is stressed.

SRA Elementary Math Program, SRA Mathematics Department. K - 6. *

Carefully sequenced topics develop, reinforce, and expand mathematical concepts and skills. Story problems and graphic presentations are included.

SCIENCE RESEARCH ASSOCIATES

Mathematics Involvement Program, 1971, Gladstone, Gladstone. K - 6.

Concrete problem-solving experiences build and reinforce concepts and skills through the use of 250 activity cards in seven levels of difficulty organized by major math areas (number, geometry, measurement). Reading is minimal.

Greater Cleveland Mathematics Program, Revised (GCMP), Educational Research Council of America. K - 6. *

This program involves teacher-directed discovery activity, logical structure, and supplemental experiences. Mastery tests and other supplementary materials are available.

Diagnosis: An Instructional Aid, 1972. 1 - 6.

Criterion-referenced diagnostic tests help pinpoint weaknesses and develop mastery of skills. The book helps individualize learning; students can score their own work. Two levels are given.

Computapes, 1972. 1 - 6.

Worksheets and cassette tapes for practice in basic arithmetic skills are provided. The 56 cassettes include 112 lessons divided into 6 modules: Addition and Subtraction A and B, Multiplication and Division A and B, Fractions, and Decimals and Percents.

Visual Approach to Math, Masalski. 1 - 8.

This seven-volume set of transparencies includes counting, place-value, number properties, geometry, sets, whole numbers and rational numbers.

Mental Computation, Kramer. 2 - 7.

Mental Computation skills are developed through independent work with word problems and suggestions for problem-solving.

Equations, Allen. 2 - 12

These five games encourage abstract thinking, symbol manipulation and mathematical logic.

Arithmetic Fact Kit, Rapp. 3 - 10.

These fact cards develop speed, accuracy, and mastery of basic arithmetic facts. They can be used as an individual or small group activity.

Skill Modes in Math, 1973, SRA Mathematics Department. 4 - 8.

This program is based on learning objectives arranged in difficulty levels. Skill dificiencies in basic arithmetic facts are discovered and remedied.

SCIENCE RESEARCH ASSOCIATES

Math Applications Kit, 1971, Friebel, Gingrich. 4 - 8.

These 270 activity cards investigate problems using elementary mathematics. Through experiments in science, social studies, sports and games, occupations and other everyday things, math becomes a tool to understanding and controlling the environment. (1974)

Cross-Number Puzzle Boxes, Murfin, Bazelon. 4 - 8.

These four kits drill students in whole numbers, fractions, decimals, percent and story problems using a crossword puzzle format.

Kaleidoscope of Skills: Arithmetic, Kramer. 5 - 7.

This series is designed for average students. Four books per grade level provide independent work to reinforce computational and reasoning skills.

The Laboratory Approach to Math, Kidd, Myers, Cilley.

This book guides students to set up a complete laboratory to learn through experience at individual pace.

Today's Mathematics: A Guide to Concepts and Methods in Elementary School Mathematics, Revised Edition, Heddens.

This source book explains concepts, defines terms and suggests activities within 24 units.

Learning and the Nature of Mathematics, Lamon.

Essays on mathematics are presented.

Secondary

Computational Skills Development Kit, Proctor, Johnson. 6 - 10.

Exercise cards, survey and diagnostic tests strengthen skills in basic arithmetic operations.

Insight into School Mathematics, Denholm, Stiel, Blank. 7 - 8. *

This book is sequenced for average and above-average students. Discovery and questions promoting discussion emphasize mathematics as a tool in problem-solving.

Mathematics Structure and Skills, Denholm, Blank. 7 - 9. *

This success-oriented course sequenced for slow learners gradually introduces new ideas through simple vocabulary and a minimum of written instructions.

Mathtapes Audiotape Program, Burkhart. 7 - 9. *

These 60 tapes in eight units are correlated with lower and middle-track textbooks. Topics include basic computational skills, mathematical systems, concepts and operations of algebra, ratios and percents, numeration systems, geometry and problem-solving. Worksheets are included.

SCIENCE RESEARCH ASSOCIATES

Algebra Skills Kit, Proctor, Lacey. 8 - 12.

These diagnostic tests and exercise cards strengthen basic algebra skills.

Flannelboards, visual aids, plastic numbers and symbols are also available.

SCOTT FORESMAN COMPANY
99 Bauer Drive
Oakland, New Jersey 07436

Elementary

Basic Mathematics Program, Seeing Through Arithmetic, Hartung, Van Engen, Knowles, Gibb, Stochl, Walch, Trimble, Berger, Cleveland. K - 6. *

Concepts are first presented visually with illustrations and then written in symbols. Guided discovery is used. Supplementary materials are available.

Secondary

Mathematics - Concepts, Applications, 1969, Van Engen, Hartung, Trimble, Berger, Cleveland, Gibb, Stochl, Walch. 7 - 8. *

The major emphasis is on problem-solving. Strong maintenance and testing, review and enrichment section are included. Visuals contribute to teaching. Duplicating masters and other supplementary materials are available.

Seeing Through Mathematics, 1968, Van Engen, Hartung, Trimble, Berger, Cleveland. 7 - 9. *

This is a three-volume series for the above-average student. A question-response technique is used to guide inductive learning.

Activities in Mathematics (A.I.M.), 1971, Johnson, Hansen, Peterson, Rudnick, Cleveland, Bolster. 7 - 8. *

These two books of games, puzzles, exercises and problems provide concrete experience and active involvement with basic mathematics. Self-correcting tests, put-together punchouts, flowcharts, tangrams, curve-stitching, magic squares, mazes, networks, topological concepts and constructions are included. (1974)

SCOTT FORESMAN COMPANY

Applications in Mathematics, Courses A and B. 9 - 12.

The material in these texts is divided into six relatively independent units: functions and graphs, relations and geometry, sampling and statistics, estimation and measurement, prediction and probability, and introductory algebra. The units are available in hard-cover texts or workbooks with "punch-outs" for activities. Duplicating masters, overhead visuals, and tests are available. The program is extremely flexible, but most examples, problems and activities would appeal more to boys than to girls. (1974)

Mathematics - Concepts, Applications (MCA), 1972-73, Ladd, Kelly, Devlin, Hartman, Robitaille, Trimble, Halberg. 9 - 11. *

This series is aimed at average students but may be used with slower students by including only the basic problem sets. An intuitive pictorial approach is used with provision for independent work. Chapters begin with motivational activities and end with enrichment activities. Exploratory problems are included. Supplementary materials are available.

MCA: Elementary Algebra. 9. *

Emphasis is placed on the basic skills of algebra and the ability to use algebra in problem-solving. Motivation is a strong element. Applications are included throughout.

MCA: Elements of Geometry. 10. *

Topics are introduced with real-world examples. An informal discussion is followed by statements in formal form. A special booklet with a viewer helps students visualize three-dimensional concepts. Art and architecture demonstrate properties.

MCA - Intermediate Algebra with Trigonometry. 10 - 11. *

Formal definitions and theorems are minimal. Graphing a function and interpreting a function graph are stressed.

MCA - Elements of Probability. 12. *

This one-semester text presents traditional topics such as permutations, combinations, and the binomial theorem, and modern topics such as the multinomial theorem and Markov chains. Computer exercises follow the practice exercises as supplemental work.

Fundamental Mathematical Structures Program (FMS), 1967, Van Engen, Hartung, Trimble, Berger, Cleveland, Kelly, Ladd, Halberg, Devlin, Crouch, Beckman. 10 - 12. *

This series for superior students provides solid foundations in mathematics and includes exercises to reinforce concepts.

FMS: Geometry, Kelly, Ladd. 10. *

Topics studies include congruence, parallelism, similarity, convexity, mappings, area and volume, circles and arcs.

SCOTT FORESMAN COMPANY

FMS: Elementary Functions. 11. *

FMS: Linear Algebra, Crouch, Beckman. 12. *

This one-semester text includes vector spaces, linear transformations and matrices.

FMS: Algebraic Systems. 12. *

This is a one-semester course.

Computer-Assisted Mathematics Program (CAMP), 1969, Johnson, Hatfield, Walther, Katzman, Kieren, La Frenz. 7 - 12. *

These supplementary texts for use with average or above-average students help them to use the computer to explore mathematical ideas. One book for each grade level is provided.

Core Mathematics, Leslie, Whitworth. 10 - 12.

This book is a review of basic mathematics.

Introduction to Industrial Mathematics, 1972, Peterson, Peter. 10 - 12.

This book may be used for one or two semesters. It provides an overview of arithmetic, work problems relating to industry, algebra, slide rule, measurement, geometry and trigonometry.

Elements of Modern Algebra. 11 - 12. *

This full-year course offers broad coverage of several topics, such as sets, matrices, complex numbers and vectors. The prerequisite is two years of algebra and one of geometry.

Modern Intermediate Algebra, 1972, Hyatt, Gechtman, Hardesty. 10 - 12.

This text is more comprehensive than many. Concept, structure and proof are given a great deal of attention. Practice material is abundant. The reading level is above average. (1974)

Intermediate Algebra, 1972, Lial, Miller. 10 - 12.

This text includes a review interspersed with new material. Complex numbers and absolute value are introduced early in the text. Modest attention is given to proof. Practice exercises are illustrated by examples. The usual topics of intermediate algebra, probability and statistics and applications from various disciplines are included.

Elementary Functions and Analysis, 1973, Halberg, Devlin. 12. *

This one-semester text introduces limits through an elementary treatment of sequences, followed by an introduction to elementary functions. Graphing and analysis are stressed.

Elements of Modern Mathematics - Calculus, 1972, Del Grande, Duff. 12. *

This full-year introductory course includes differential and integral calculus, differential equations, series, polar coordinates, complex numbers and Maclaurin's series.

SCOTT FORESMAN COMPANY

A Panorama of Numbers, 1970, Wisner. 7 - 12.

This supplement extends and enrishes work with number theory through many exercises.

Essential Mathematics, Stockton. 9 - 12.

This workbook with programmed reviews and tests provides a refresher of arithmetic, algebra and geometry.

What Are Numbers?, Auslander. 1 - 12.

This step-by-step presentation of new theorems, new proofs and new definitions leads to an understanding of real numbers. The emphasis is practical.

The Golden Section and Related Curiosa, 1972, Runion. 9 - 12.

This book explores geometric and algebraic topics as well as applications in art and nature. It is suitable for class or independent study. Topics include the Golden Rectangle, pentagrams, and Fibonacci sequences.

Trigmate, 1971. 11 - 12. *

This manipulative device shows the meaning of trigonometric functions and reveals relationships between the functions.

Sequences and Limits, 1972, Gaughan. 10 - 12.

This supplement deals with the limit concept arising from problems involving sequences.

Introduction to Computer Science, 1970, Adams, Moon. 12. *

This one-semester course emphasizes problem-solving in FORTRAN.

Geoboards, arithmecubes, geoshapes, polyhedron rummy, and other supplementary materials are also available.

CHARLES SCRIBNERS' SONS
597 Fifth Avenue
New York, New York 10017

Secondary

Numbers: Fun and Facts, 1972, Friend. 7 - 12.

Very little mathematics background is needed to enjoy this book. The traditions, legends, superstitions, origins and peculiarities of numbers are presented.

CHARLES SCRIBNERS' SONS

Polyominoes, 1964, Golomb. (MAT)

The Moscow Puzzles: 359 Mathematical Recreations, 1972, Kordemsky.

Some items use only clear thinking; others are mathematically complex. Appropriate answers are provided.

SILVER BURDETT COMPANY
General Learning Corporation
Morristown, New Jersey 07960

Elementary

Silver Burdett Mathematics System, 1973, McKellip. K - 1. *

These three booklets for three difficulty levels include a parent involvement page in each.

Silver Burdett Mathematics System, 1973, LeBlanc, Vogeli, Scott, Grimsley, Barnhart, Morodock, Prevost. 1 - 8. *

A non-verbal approach incorporates real-world situations to initiate performance objectives with concentration on skills and problem-solving. Topics include sets, numbers and numeration, operations and properties, sentences and problem-solving, geometry and measurement, probability, statistics, graphing, relations and functions. Supplementary materials include games, kits, practice books, films and diagnostic tests.

Modern Mathematics Through Discovery, 1970, Morton, Gray, Rosskopf, Morodock, Collins, Sage, Gilbert, Trafton, Sinard. K - 8. *

This series includes practice books and tests.

Secondary

Algebra One. 9. *

Geometry. 10. *

Algebra 2 and Trigonometry. 11. *

The Engineer, 1966, McCarthy, Furnas. (MAT)

Machines, 1969, O'Brien. (MAT)

Time, 1966, Claiborne, Goudsmith. (MAT)

SILVER BURDETT COMPANY

Mathematics, 1969, Bergamini.

This is one of the books in the Life Science Library. (MAT)

Games and math-kits are also available.

SIMON AND SCHUSTER
630 Fifth Avenue
New York, New York 10020

Secondary

Mathematics for the Million, Hogben. 7 - 12.

This is a history of mathematics as it evolved to meet the world's needs.

Men of Mathematics, 1961, Bell. (MAT)

3.1416 and All That, 1969, Davis, Chinn. (MAT)

Fantasia Mathematica, Fadiman.

These pseudo-mathematical materials provide no mathematics, but lots of fun. (MAT)

The Mathematical Magpie, 1961, Fadiman.

This is a wider and deeper sequel to Fantasia Mathematics. (MAT)

The Scientific American Book of Mathematical Puzzles and Diversions and The Second Scientific American Book of Mathematical Puzzles and Diversions, Gardner.

Paradoxes, paperfolding, Moebius strips, fallacies, magic squares, probability, and other games and puzzles are included. (MAT)

New Mathematical Diversions from Scientific American, 1966, Gardner.

These diversions are suitable for projects. (MAT)

The Unexpected Hanging, 1969, Gardner. (MAT)

Mathematics and the Imagination, 1963, Kasner, Newman.

This book contains puzzles as well as sound mathematics material. (MAT)

Playing with Infinity: Mathematics for Everyone, 1962, Peter. (MAT)

Professor Egghead's Best Riddles. 7 - 12.

This book presents riddles where the question is foolish and the answer is sensible in the areas of history, geography, mathematics and science.

TEACHING RESOURCES CORPORATION
100 Boylaton Street
Boston, Massachusetts 02116

Elementary

F.U.N. Program (Fundamentals Underlying Number), Wilson, Uprichard. K - 1. *

This program includes a series of games in the concept areas of one-to-one correspondence, greater than/less than and equivalence class and order. The sixteen sequenced levels specify objectives in a spiral development.

Foundations for Mathematics, Cruickshank. K - 2. *

These four sequential units provide a foundation for basic skills and concepts. Visual and manipulative materials and worksheets are available. Topics include sets, lines, planes and comparing sets and numbers. Discovery activities are nonverbal. Behavioral objectives are specified.

Attribute Games. K - 3.

This product develops the concepts of sets, logic, and Venn diagrams and increases ability in reasoning and problem-solving skills.

Mathematics Skills Development.

Concrete experience in number concepts and operations using cubes is provided.

TECHNICA EDUCATION CORPORATION
1864 South State Street, Suite 100
Salt Lake City, Utah 84115

Secondary

Mathematics. 7 - 12. *

These eight student lab books incorporate the study of computers and programming. Math topics include patterns and exponents, factors and multiples, geometry, integers and equations, rational and real numbers, plotting and graphs, sets, logic and probability, and special assignments.

Teach Yourself BASIC, Volumes I and II.

TROUBADOUR PRESS
120 Folsom Street
San Francisco, California 94105

General

Maze Craze 1 and 2.

Two books of mazes provide fun and practice in logical reasoning.

Geometric Playthings.

Geometric forms to construct and manipulate are described. The flexagon, polyhedra and the Moebius strip are included.

Optricks.

Forty optical illusions and explanations for each are provided.

Color and Puzzle.

Activities in visual discrimination, decoding and problem-solving are described.

UNITED STATES ATOMIC ENERGY COMMISSION
Technical Information Center
Box 62
Oak Ridge, Tennessee 37830

Secondary

Computers, Corliss. 9 - 12.

The history and anatomy of computers are considered. Binary numbers, electronics and analog computers are also discussed. This is a good short introduction with some challenging problems. Applications are made clear. (1974)

UNIVERSITY OF CHICAGO PRESS

Secondary

The Calculus, A Genetic Approach, 1963, Toeplitz. 12.

This book describes the historical evolution of calculus for mature readers. (MAT)

UNIVERSITY OF DENVER

Secondary

Modules for Use in a Mathematics Laboratory.

Area, baseball, perimeter, ration, sales tax, intuitive geometry, basketball, travel, the metric system, patterns in nature, intuitive probability, and people patterns are some of the units available.

Geometry Problems for Computer Solution, Reed, Koerner.

Computer-Extended Mathematics Publications (CMCP).

Self-contained instructional units are:

Analysis of Critical Points of Polynomial Functions, Bourke, Brewer.

Topic units on selected subjects to supplement the text include:

Quadratic Equations, Adams, Clark, Hoffman, Talbert.
Systems of Equations, Clark, Hoffman, Talbert.
Area Under a Curve, Brasch, Clark, Hoffman.
Polynomials, Clark, Hoffman, Talbert.

Other topics are:

Natural Bases for Logarithms, Bradford, Jones.
Complex Numbers, Bradford, Jones, Larsen.
Circular Functions, Dorn, Bradford, Bourke.
Introduction to the Integral, Mauland.
Techniques of Numerical Integration, Johnson.
Numerical Solutions to Differential Equations, Johnson.

Mathematics for Careers Projects. 7 - 12.

Learning packets in ten areas are provided: auto mechanics, banking, carpentry, cosmetology, drafting, electrician, electronics, health, interior design and plumbing.

THE VIKING PRESS, INC.
625 Madison Avenue
New York, New York 10022

Secondary

String, Straightedge and Shadow, 1965, Diggins. 7 - 12.

The history of geometry is presented in story format. (MAT)

Puzzle-Math, 1958, Gamow, Stern.

Braintwisters and puzzles based on everyday situations are presented. (MAT)

THE VIKING PRESS, INC.

Mathematics in Your World, 1962, Menninger.

This book explores analysis problems but requires little background. (MAT)

WADSWORTH PUBLISHING COMPANY, INC.

Secondary

Introduction to Matrices and Determinants, 1967, Stein. (MAT)

J. WESTON WALCH
Box 658
Portland, Maine 04104

Secondary

Paper Plus, Ranucci. 7 - 12.

Paperfolding puzzles and proofs are presented.

A Collection of Cross-Number Puzzles, Brandes. 7 - 12. *

Computation is emphasized with whole numbers, fractions, decimals, percent, powers and square root, measures, perimeters, areas and volumes.

Shortcuts, Checks and Approximations in Mathematics, Garvin. 7 - 12.

Addition, subtraction, multiplication, division and square roots are discussed.

Patterns and Puzzles in Modern Math, Graflund. 7 - 12.

Number bases, sets, probability, statistics, geometry, algebra and trigonometry are studied.

Basic Math Puzzles. Greflund. 7 - 12.

This book is for slow learners. Cartoons, coded messages, cross-number puzzles and magic squares involve basic operations with whole numbers, fractions and decimals, ratio, proportion, percent, algebra, geometry, and measurement. Diagnostic tests are also included.

Yes, Math Can Be Fun, Brandes. 7 - 12. *

This is a collection of number oddities, puzzles, tricks, games, illusions and projects on all levels.

J. WESTON WALCH

4 The Math Wizard, Brandes. 7 - 12. *

This book includes puzzles, games and stories with cartoon characters. Topics include logical reasoning, vocabulary, basic operations, number theory, measure, polygons and circles, perimeters, areas and volumes, binaries and others.

Getting Ready for Algebra, Call. 8. *

Number properties are developed.

Algebra Problems, Phillips. 9.

This book is for first-year algebra students.

50 Puzzles in Algebra, Levy. 9 - 12.

Cross-number puzzles are presented.

Geometry Problems, Higgins. 10. *

Problems for average and above average students are posed.

Geometrical Models and Demonstrations. 7 - 12.

Plane and solid geometry are discussed.

Tessellation and Dissection, Ranucci.

Offset types of tessellations, the use of any triangle or quadrilateral for tessellation, dissection, polyominoes and transformations are studied.

Advanced Graphing, Newton.

18 exercises with 14 - 53 equations each form amusing pictures.

Mathematics for Distributive Education, Mason. 9 - 12. *

This is a text-workbook-reference book for a one-semester course or as a supplement.

Math for Today and Tomorrow, Mach, Larson. 12. *

Computational skills, consumer buying, insurance and real estate are studied.

Other games, puzzles, slides and math lab materials are also available.

JOHN WILEY AND SONS, INC.
605 Third Avenue
New York, New York 10016

Elementary

Nuffield Project.

This discovery-oriented project is based on Piagetian theory. Teacher and parent guides are available.

Mathematics Begins. K - 2. Counting numbers are developed. Relations, matching, one-to-one correspondence, sorting and ordering are discussed.

Computation and Structure. 1 - 8. Activities with counting numbers, weights, measures, length, capacity, time, money, place-value and addition are in book 2. Book 3 works mainly with multiplication, factors, primes and fractions. Book 4 introduces decimals in connection with measurement. Modular arithmetic and subtraction are also included. Book 5 deals with addition of decimal numbers and introduces rationals as equivalence classes or ordered pairs of natural numbers.

Beginnings 1. K - 2. This is a parallel guide to Mathematics Begins dealing with measurements arising from the environment.

Shape and Size 2, 3, 4. 1 - 8. Geometrical ideas are developed, beginning with symmetry, angles, perpendicular, horizontal and vertical. Two-dimensional shapes are classified. Venn diagrams are used. Translation, rotation and reflection are studied in book 3, as well as polygons, tessellations and polyhedra. Book 4 introduces vectors.

Pictorial Representation 1. K - 5. This introduction to graphs begins by using blocks and one-to-one correspondence. Block-graphing, coloring in squared paper, bar and line graphs, ideographs Pi-charts are studied.

Graphs Leading to Algebra 2, 3. 3 - 8. Coordinates and open sentences are introduced. Inequalities are graphed. Rational numbers, simultaneous equations and simple linear programming are included.

How to Build a Pond. 3 - 5. Math is incorporated in a project. The story of building a pond for some ducks which were received as a gift is told in the children's own words.

Environmental Geometry. K - 6.

Probability and Statistics. 4 - 8. The importance of collecting statistical data in an organized manner is stressed. Games and activities, the Morse code and a typewriter keyboard are used.

Computers and Young Children. 4 - 8. Flowcharts, decision boxes, loops, and punched cards are used.

Logic. 3 - 7. The emphasis here is on language used in everyday life.

Checking Up 1 and 2. K - 3. This book coordinates with Mathematics Begins. It shows that children acquire concepts gradually and points out difficulties. Part 1 deals with operations on numbers, Part 2 with shape and size.

Sets of Problems. 6 - 8. *

Modules of Work. 6 - 8. These enrichment supplement work-cards involve practical activities on a single topic. Topics include speed and gradient, decimals, number patterns, symmetry, angles, course and bearings. More are planned.

JOHN WILEY AND SONS, INC.

Secondary

Introduction to Geometry, 1961, Coxeter.

This is a survey of important areas stressing their relationships to modern algebra. (MAT)

A History of Mathematics, 1968, Boyer. (MAT)

Computer Programming and Related Mathematics, 1967, Andree. (MAT)

Computers: Introduction to Computers and Applied Computing Concepts, 1967, Davidson, Koenig. (MAT)

Mathematics and Computing with FORTRAN Programming, 1968, Dorn, Greenberg.

This book stresses the development of mathematical thought and uses the computer as a tool. (MAT)

BASIC Programming, 1968, Kemeny, Kurtz.

This easily-read book describes the programming language BASIC. Problems in a wide variety of areas are included. (MAT, 1974)

An Introduction to the Elements of Mathematics, 1961, Fujii.

This book relates the history and gives an elementary treatment of analysis and problem-solving. (MAT)

An Introduction to Linear Programming and the Theory of Games, 1963, Clicksman. (MAT)

A Geometric Introduction to Linear Algebra, 1963, Pedoe.

This is a simple introduction to linear algebra. (MAT)

Mathematical Discovery, Volumes 1 and 2, Polya. 11 - 12.

This book relates ways and means leading to the discovery of solutions to problems. A wide variety of problems are included. (MAT)

Basic Concepts of Elementary Mathematics, Schaaf.

The nature and number of enumeration, the logical structure of arithmetics, the number system of arithmetic and algebra, informal and formal geometry, computation, measurement, functional relations and probability are described. (MAT)

Science Awakening, 1963, Van de Veerden.

The history of early mathematics from the Egyptians to the decay of Greek mathematics is told. (MAT)

Introduction to Foundations of Math, Wilder.

This book stresses set theory and logic. (MAT)

JOHN WILEY AND SONS, INC.

Mathematics, the Alphabet of Science, Willerding, Hayward.

This book is of interest to non-mathematics students as well. (MAT)

The Nature of Mathematics, 1968, Young.

This book is especially suitable for non-mathematicians. (MAT)

WORTH PUBLISHING COMPANY

Secondary

Beginning Algebra, 1972, Munem, Tschirhart. 12. *

This text, originally written for community college students, could be adapted to a twelfth-grade course for students needing further mathematics. All of the basic topics of a first-year algebra course are included. There is no provision for discovery.

Excursions into Mathematics, 1969, Beck, Bleicher, Crowe.

This book presents problems suitable for individual investigations. (MAT)

YOUTH EDUCATION SYSTEMS, INC.
P. O. Box 592
Stamford, Connecticut 06904

Intermediate

Simplified Modern Math. 4 - 9.

These three units include examples and a few practice exercises.

Whole Numbers, Davis. Numeration systems (decimal, quinary - base 5, and binary), sets, operations with whole numbers, primes, composite numbers, factors and multiples are studied. A final test and glossary are included.

Rational Numbers, Davis. This self-study review includes common fractions, mixed numbers, operations, decimals, irrationals, glossary, and a final test.

Elementary Algebra, Holloway. These review notes supplement the study of sets, operations and properties, signed numbers, rationals and irrationals, equations, proof, exponents and factoring, fractions, and inequalities. A variety of word problems are included. (1974)

YOUTH EDUCATION SYSTEMS, INC.

Secondary

Study-Aids.

These include no exercises, only examples.

Mathematics. 7 - 8. Counting whole numbers, fractions, mixed numbers, decimals, percent, solving problems, algebra, equations, and geometry are described. A glossary is included.

Elementary Algebra, Wohlberg. 9 - 10. Typical word problems and a glossary are included as well as examples and tables in operations, equation-solving, multiplication and division of polynomials, graphing, and factoring.

Plane and Coordinate Geometry, Vellozzi. 10 - 11. Illustrations of terms, a list of theorems and definitions, proofs of required theorems, triangles, angles, transversals, coordinate geometry, quadrilaterals and parallelogram examples are given.

Intermediate Algebra, Radvany. Fundamental operations, laws, properties, factoring, fractions, complex fractions, equations in one or more unknowns, formulas, radicals, imaginary numbers, quadratics, graphs, trigonometry, logarithms, binomial theorem, progressions and sample word-problems are included. (1974)

ZENSEN

Secondary

Stereometry, 1969, Zensen. 10.

This text approaches the study of geometric figures in 1, 2 and 3-space from a concrete viewpoint. By making 3-dimensional models the student proves the standard solid geometry content.

SUPPLEMENTARY MATERIALS

Math laboratory materials, games and puzzles and other supplementary materials are also available from the following publishers:

BENEFIC PRESS
10300 W. Roosevelt Road
Westchester, Illinois 60153

CREATIVE PLAYTHINGS
Princeton, New Jersey 08540

CREATIVE TEACHING ASSOCIATES
P. O. Box 293
Fresno, California 93708

DATA GUIDE
154-01 Barclay Avenue
Flushing, New York 11355

EUGENE DIETZGEN COMPANY
Box 5788
Arlington, Texas 76011

EDMUND SCIENTIFIC COMPANY
150 EDSCORP Building
Barrington, New Jersey 08007

EduKaid OF RIDGEWOOD
Ridgewood, New Jersey 07450

THE INSTRUCTO CORPORATION
Paoli, Pennsylvania 19301

KENNER PRODUCTS
912 Sycamore Street
Cincinnati, Ohio 45202

KEUFFEL & ESSER COMPANY
20 Whippany Road
Morristown, New Jersey 07960

LANO COMPANY
4741 West Liberty Street
Ann Arbor, Michigan 48103

S. J. MILLER COMPANY, INC.
P. O. Box 3522
Boulder, Colorado 80303

NASCO
Fort Atkinson, Virginia 53538

PICKETT, INC.
Pickett Square
Santa Barbara, California 93102

SCOTT RESOURCES
Box 2121
Fort Collins, Georgia 80521

SELCHOW AND RIGHTER COMPANY
2215 Union Boulevard
Bay Shore, New York 11706

SKOR-MOR CORPORATION
6390 Cindy Lane
Carpinteria, California 93103

WILBERN PRODUCTS
10749 Chandler Boulevard
North Hollywood, California 91601

The following companies provide visual and multimedia mathematics materials:

AIMS Instructional Media Services, Inc.
P. O. Box 1010
Hollywood, California 90028
Sound filmstrips.

BFA Educational Media
2211 Michigan Avenue
Santa Monica, California 90404
Films in varied areas rent from $6 to $20.

Coronet Films
65 East South Water Street
Chicago, Illinois 60601
Films, filmstrips, and audio-cassette programs.

Demco Educational Corporation Box 1488 Madison, Wisconsin 53701	
Encyclopedia Britannica Educational Corporation 425 North Michigan Avenue Chicago, Illinois 60611	Films and film loops.
Eye Gate House 146-01 Archer Avenue Jamaica, New York 11435	Filmstrips and transparencies.
International Film Bureau 332 South Michigan Avenue Chicago, Illinois 60604	Films on geometry, algebra, logarithms and the slide rule are from 10 to 15 minutes long and rent for $5 to $15.
Pathescope Educational Films, Inc. 71 Weyman Avenue New Rochelle, New York 10802	Films and filmstrips for grades 4-12 on the metric system and careers in mathematics.
Society for Visual Education 1345 Diversey Parkway Chicago, Illinois 60614	Filmstrips.
Troll Associates 320 Route 17 Mahweh, New Jersey 07430	Tapes, filmstrips, transparencies, film loops and multimedia units.